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Magazine of the Year
2006

FIGHTING WORDS
IT execs, Novell slam Microsoft CEO Steve Ballmer's Linux liability claims. **PAGE 6**

DEPLOYMENT HEADACHES
Robert L. Mitchell says Office 2007 has something in common with his clogged vacuum cleaner. **PAGE 28**

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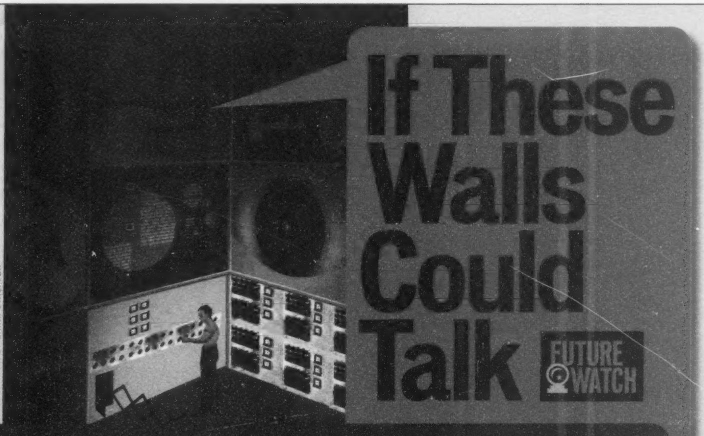

ILLUSTRATION BY BRIAN STAUFFER

If These Walls Could Talk

For years, pundits have predicted the arrival of "smart spaces" – like Bill Gates' house – where sensors respond to human behavior. The technology exists, but Gary Anthes reports that there are cost and reliability concerns. **Page 20**

N.Y. Counties Tap BI Tools to Expose Medicaid Fraud

Aim is to cut costs as state's bill rises to $44B this year

BY HEATHER HAVENSTEIN

In the second week of November, officials from Onondaga County, N.Y., compelled 100 Medicaid recipients to obtain documentation from their physicians to justify frequent narcotics prescriptions.

The county, which includes the city of Syracuse, will pay about $90 million in Medicaid costs this year. Officials used business intelligence and analytics tools to identify cases where the prescription totals indicated that patients might be attempting to commit fraud, said Steve Morgan, the county's executive deputy commissioner of social services.

The county began using the tools in September as part of an effort to stem Medicaid fraud, Morgan said.

Likewise, officials in Nassau County on New York's Long Island have launched two multimillion-dollar investigations based on data compiled using BI tools, in an effort to identify potential Medicaid fraud by county residents.

Because the investigations are ongoing, Nassau County

BI Tools, page 14

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DOD Report to Detail Dangers of Foreign Software

Task force says U.S. adversaries may sabotage code developed overseas

BY GARY ANTHES

A U.S. Department of Defense task force early next year plans to warn the Pentagon of a growing threat to national security from adversaries who could insert malicious code in software developed overseas.

The Defense Science Board, a military/civilian think tank within the DOD, will issue a report that calls for a variety of prevention and detection measures but stops short of recommending that all software procured by the military be written in the U.S., said the head of the task force that has been studying the so-called foreign influence issue.

The possibility that programmers might hide Trojan horses, trapdoors and other malware inside the code they write is hardly a new concern. But the DSB will say in its report that three forces — the greater complexity of systems, their increased connectivity and the globalization of the software industry — have combined to make the malware threat increasingly acute for the DOD.

"This is a very big deal," said Paul Strassmann, a professor at George Mason University in Fairfax, Va., and a former CIO at the Pentagon. "The fundamental issue is that one day, under conditions where we will badly need communications, we will have a denial of service and have billion-dollar weapons unable to function."

Robert Lucky, the chairman of the DSB task force, said this

DOD Report, page 41

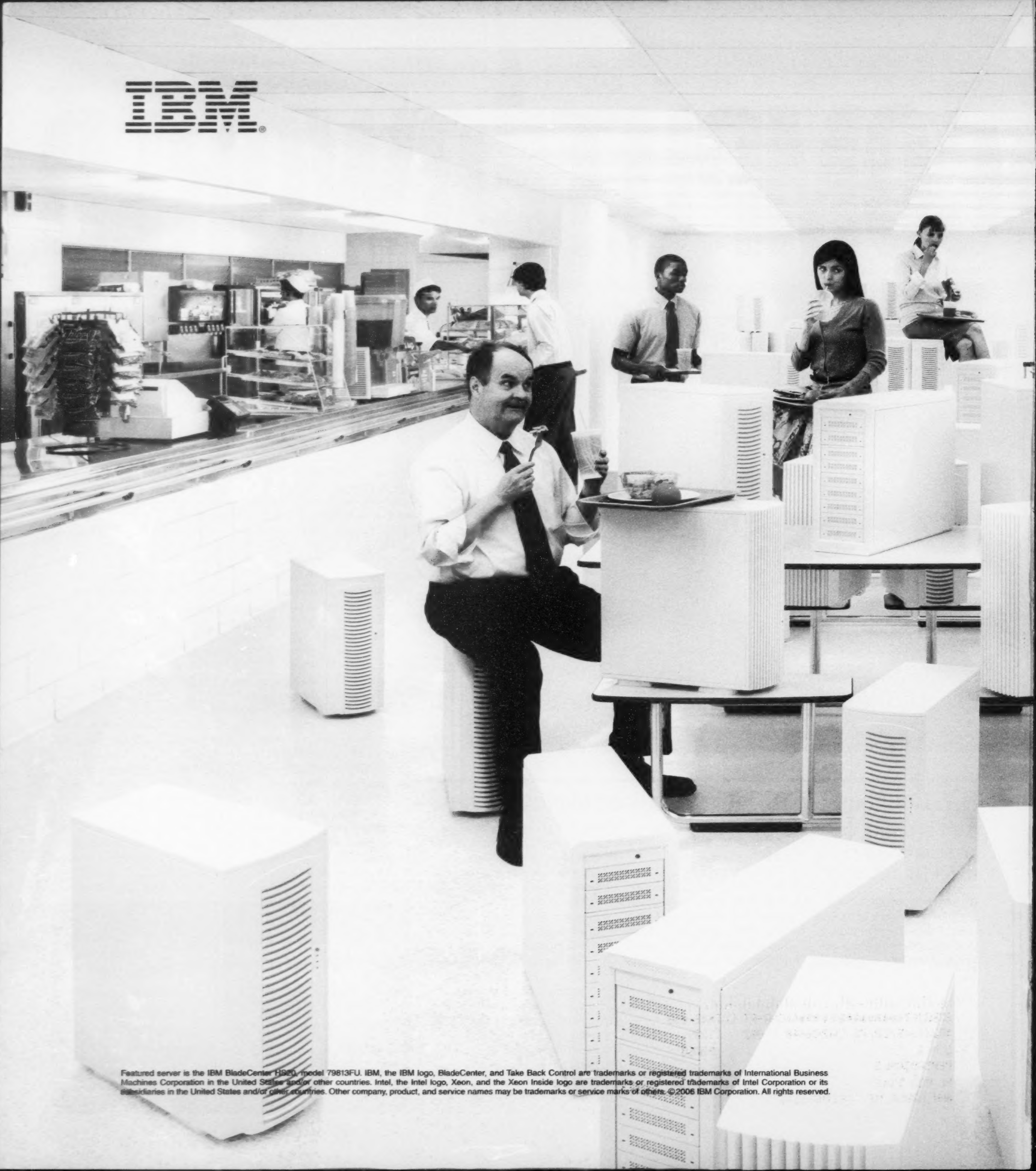
INSIDE
The DOD needs to simplify its approach to IT, says former CIO Paul Strassmann. **Page 41**

E-GOVERNMENT REPORT CARD

Good Government, On the Web

The National Policy Research Council has evaluated and graded 11,227 official state and local government Web sites. Mitch Betts reports on what the top-ranked sites offer to users, and on e-government's loss of momentum in recent years. **PAGE 10**

> "We try to stay on the cutting edge, to make sure we're doing it first and doing it better.
>
> **JIM HOGAN**, INFORMATION OFFICER, MICHIGAN DEPARTMENT OF IT



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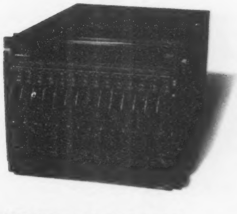
_INFRASTRUCTURE LOG

_DAY 25: They're in the cafeteria!! AAAGGGHHH!! These useless things can't work with each other. They aren't scalable. They aren't responsive. And you can't adjust new capacity on the fly. The horror.

_So many of them, I have to eat standing up. My arches are killing me. And I got avocado on my shirt.

_DAY 26: The answer: IBM BladeCenter® with Dual-Core Intel® Xeon® Processors to boost performance and balance workloads. Its self-automating features make it easy to manage, and it has more blades per chassis for a smaller footprint. The BladeCenter even opened up its specs, so the things we buy today can work with the things we buy tomorrow.

_I can eat my turkey-avocado sandwiches in peace again. Mmmmm...



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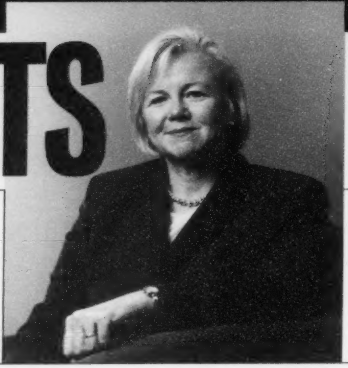

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Avoiding Data Migration Delays

In the Technology section: An IT veteran offers six suggestions for approaching data migration so it won't cause embarrassing delays in your project. Hint: Avoid data synchronization. **Page 24**

Work/Life Balance: What's It Worth?

In the Management section: Flexible companies that help their employees have lives outside the office get ROI in the form of a better, more committed workforce, say IT execs like Mary Finlay of Partners HealthCare. **Page 30**

NEWS

6 **Microsoft CEO** Steve Ballmer's assertion that Linux "uses our intellectual property" was sharply criticized by some Linux users and by Novell, Microsoft's new business partner.

6 **E-voting glitches** in Sarasota County affected the outcome of Florida's 13th district congressional race, losing candidate Christine Jennings alleges in a lawsuit.

10 **Michigan gets** the top grade among the 50 U.S. states in a study that rated more than 11,000 state and local government Web sites on criteria such as usability.

12 **Many companies** aren't ready to meet federal guidelines for the submission of electronic documents in civil lawsuits, according to a *Computerworld* survey.

14 **Federal guidelines** for stronger authentication of online users won't be enough to truly secure Web banking systems, say IT execs at banks and credit unions.

15 **Q&A: Bank of America** IT manager Craig Hinkley discusses the bank's effort to install about 180,000 VoIP phones in its U.S. operations by early 2009.

16 **Global Dispatches:** India-based Satyam Computer Services plans to increase its workforce in China, partly to help ensure that it has enough employees to support its offshore services.

16 **Q&A: Borland** exec Rick Jackson explains why the software vendor decided to turn its tools business into a new subsidiary instead of selling the unit.

TECHNOLOGY

20 **Future Watch: If These Walls Could Talk.** For years, technopundits have predicted the arrival of "smart spaces" — environments in which sensors respond to human needs. The technologies exist, but there are barriers to adoption such as cost, questionable interoperability and reliability, and social and cultural hurdles.

26 **Security Manager's Journal: Putting the Brakes on Net Integration.** After looking at the sorry state of an acquisition target's network, Mathias Thurman figures that he'll almost have to start from scratch to provide the necessary security.

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34 **Managers' Forum.** How can you tell if you have a morale problem among your IT employees? If you have to ask, you probably do, says Paul Glen. But there are other warning signs. He also offers some suggestions for getting senior management commitment for an IT initiative.

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18 **Mark Hall** worries that our schools are creating tech-savvy kids who lack the basics of critical thinking.

18 **Thornton A. May** thinks chief privacy officers can make a big difference for companies that market to consumers, but their doings and whereabouts are a bit mysterious.

28 **Robert L. Mitchell** predicts that the new user interface and file format that come with Microsoft's Office 2007 will cause some transition problems.

36 **Paul Ingevaldson** learned a lesson when he taught an MBA class recently: IT's image among young business people hasn't changed — it's as bad as ever.

42 **Frankly Speaking: Frank Hayes** says IT should be grateful for whistleblowers like the one who brought disruption to Kaiser Permanente by exposing how the CEO and CIO forced the company to adopt a questionable electronic health records system.

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Measure Your Backup Health

STORAGE: Partial backup completion, consecutive backup failures, media utilization and tape drive performance are all metrics to consider when checking the health of backups, says columnist Jim Damoulakis.
www.computerworld.com/storage

Privacy on a Global Scale

MANAGEMENT: Jay Cline sees a way to clear out the clutter and settle on seven privacy principles acceptable to most nations in the Western world.
www.computerworld.com/itmanagement

Avoid Virtualization Dangers

HARDWARE: Consolidating your servers? Two Avanade consultants offer advice on reducing the risks of putting too many applications in too few hardware baskets.
www.computerworld.com/hardware

Nine Steps to a Secure, Stable Windows Environment

WEBCAST: Protecting Windows systems requires a multifaceted strategy that incorporates sophisticated technologies, IT management savvy and user education. This webcast describes a nine-point plan to help you secure and stabilize Windows environments while getting users up to speed on sensible password and security practices.
www.computerworld.com/webcasts

Why Megapixels Don't Matter

MOBILE/WIRELESS: Most people believe that when it comes to digital cameras, the more megapixels the better. That's not always true.
www.computerworld.com/mobilewireless

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AT DEADLINE

IBM, Cray Snag DARPA Contracts

IBM and Cray Inc. have won U.S. government contracts to design next-generation supercomputers. The Defense Advanced Research Projects Agency awarded a $250 million contract to Cray and a $244 million one to IBM. Each company is expected to have a prototype ready by 2010. Sun Microsystems Inc., which had won earlier rounds of bidding, lost out on the latest round.

U.S. Gives Nod to Alcatel-Lucent Deal

The Committee on Foreign Investment in the U.S., an interagency panel led by the secretary of the Treasury, has given its approval to the planned merger of Alcatel SA and Lucent Technologies Inc. President George W. Bush accepted the committee's recommendation that he not suspend or prohibit the planned merger on security grounds. The companies announced their merger deal in April and plan to create a giant communications equipment maker based in Paris.

Akamai Buys Online Service Provider

Akamai Technologies Inc. has agreed to buy Nine Systems Corp., a multimedia management service provider, for about $160 million in cash and stock. Akamai said it will retain Nine Systems' facilities in Denver and San Diego and keep most of its 57 employees. Akamai said the acquisition will help it expand its tool set for online content.

Avaya Purchases Traverse for $15M

Avaya Inc. last week acquired Traverse Networks, a privately held company, for $15 million. Traverse makes server and client software designed to let enterprise workers easily retrieve and manage voice mail on a broad range of mobile devices. The technology will be added to the new Avaya Unified Communications Edition software products.

Ballmer Blasted for Linux Stance

Users, Novell criticize Microsoft CEO's claims about intellectual property

BY ERIC LAI

MICROSOFT CORP. CEO Steve Ballmer's declaration that Linux "uses our intellectual property" fanned a firestorm of controversy last week, with Novell Inc. objecting to Ballmer's characterization of its recent patent deal with Microsoft and some users accusing him of trying to sow fears about using Linux.

At a SQL Server user group conference in Seattle on Nov. 16, Ballmer asserted that every Linux user "basically has an undisclosed balance sheet liability" related to the use of Microsoft's intellectual property. He also said that as part of a joint development and patent licensing agreement announced earlier this month, Novell had paid Microsoft for the right to tell users of its SUSE Linux software that they are "appropriately covered."

But Russ Donnan, CIO at Kroll Inc.'s Kroll Factual Data subsidiary in Loveland, Colo., said via e-mail last week that he thinks Ballmer was "posturing for mind share to enterprise executives, knowing it will have little to no impact on IT executives."

'Liability' Dismissed

Kroll Factual Data, which provides credit reports and other business information services, currently uses both Windows and Red Hat Linux on servers in its data centers. Donnan plans to switch the Red Hat servers to Windows for ease of management, but he said the shift has nothing to do with concerns about legal issues.

"I do not believe that my company has an 'undisclosed balance sheet liability,' " Donnan wrote, adding that "the threat of such a 'liability' would not in any way influence" his future buying decisions on operating systems.

Barry Strasnick, CIO at financial services firm CitiStreet LLC in North Quincy, Mass., was even more emphatic in his criticism of Ballmer. Strasnick said via e-mail that he viewed Ballmer's comments as an attempt to create fear, uncertainty and doubt among Linux users. "FUD may have worked for IBM in the 1970s but not today," Strasnick wrote.

He added that he had been thinking of moving some applications from Red Hat to Windows, "but this has now totally alienated me from Microsoft."

Novell CEO Ron Hovsepian also took issue with Ballmer's comments in an open letter posted on his company's Web site. "Our agreement with Microsoft is in no way an acknowledgment that Linux infringes upon any Microsoft intellectual property," Hovsepian wrote. "We strongly object to the usage of our agreement to suggest that members of the Linux community owe Microsoft any remuneration."

Microsoft released a statement saying it "respects Novell's point of view on the patent issue, even while we respectfully take a different view." Microsoft acknowledged that Novell is "absolutely right" in saying it didn't admit to any Linux patent problems as part of their agreement.

The companies later held a joint conference call with reporters to say that they remain committed to their alliance, despite the flare-up over Ballmer's comments. ▸

PARTNERS AT ARMS

> **"We believe every Linux customer basically has an undisclosed balance sheet liability [to Microsoft].**
>
> **MICROSOFT CEO STEVE BALLMER**, SPEAKING AT A DATABASE USER CONFERENCE ON NOV. 16

> **"We strongly object to the usage of our agreement to suggest that members of the Linux community owe Microsoft any remuneration.**
>
> **NOVELL CEO RON HOVSEPIAN,** IN AN OPEN LETTER POSTED ON THE COMPANY'S WEB SITE LAST MONDAY

Lawsuit Blames E-voting Glitches For Florida Election Undercount

BY MARC L. SONGINI

The losing candidate in a disputed Florida congressional election has filed a lawsuit contending that glitches in electronic voting machines in Sarasota County were the main reason for most of the 18,000 so-called undervotes there in the Nov. 7 election.

Christine Jennings last week filed suit in Leon County's Second Circuit Court in Tallahassee contending that the glitches in machines used in Sarasota County affected the outcome of her race because 18,000 voters taking part in the election apparently did not cast a ballot in that contest. The candidate asked that a county judge order a new election.

Jennings, a Democrat, lost the race to represent Florida's 13th District in the U.S. House of Representatives by 369 votes to Republican Vern Buchanan. Two recounts upheld that tally. The election was officially certified on Nov. 20 by the Florida Elections Canvassing Commission.

Undervotes, or ballots that have been cast but are missing votes for individual races, represented 15% of the votes cast in Sarasota. That rate was abnormally high, Jennings maintains in her lawsuit. The rates in other counties were far lower, according to the suit.

Jennings contends in the lawsuit that the overwhelming majority of undervotes in Sarasota County were not conscious decisions by citizens not to cast a vote in the congressional race. Rather, she argues, they were caused by a problem with the touch-screen system.

The complaint names as plaintiffs Florida Secretary of State Sue Cobb, the Elections Canvassing Commission, Buchanan and other county and state officials.

"The vote totals in the certification are wrong because they do not include thousands of legal votes that were cast in Sarasota County but not counted due to the pervasive malfunctioning of electronic voting machines," stated the complaint.

The suit urged the judge to order a rapid examination of the audit and ballot image logs in the machines, have the Elections Canvassing Commission void the current results, decertify Buchanan as winner, and either declare Jennings the victor or hold a special election.

Voter Action, a nonprofit election watchdog organization in Berkeley, Calif., and the American Civil Liberties Union of Florida last week announced plans to jointly file another lawsuit calling on the same court to order an investigation of the performance of the e-voting machines and a new election.

Election Systems & Software Inc. in Omaha, the maker of Sarasota County's e-voting machines, said it had not seen the lawsuit and declined to comment. ▸

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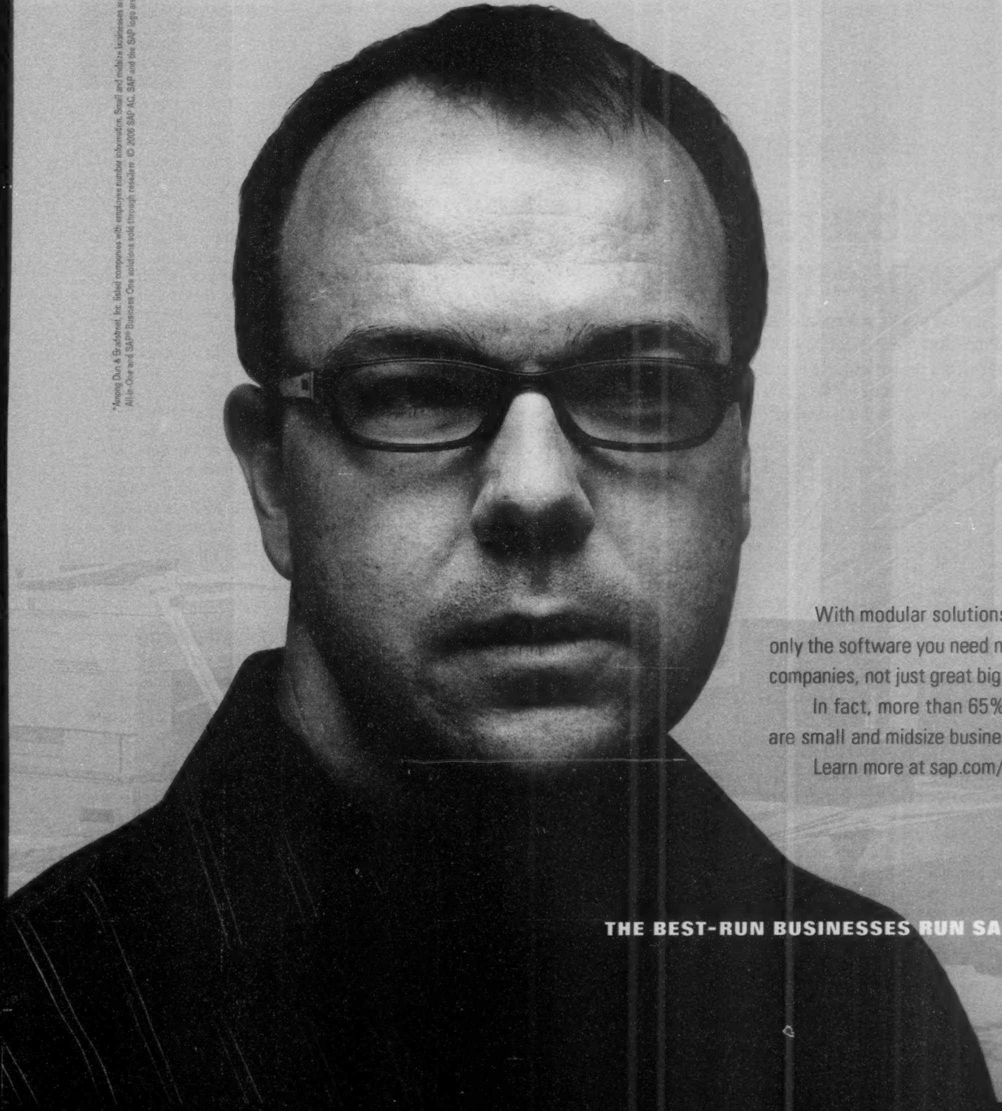
BY THE GUYS IN PROCUREMENT.



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BRIEFS

Alcatel Files Suits Against Microsoft

Alcatel SA has accused Microsoft Corp. of infringing seven U.S. patents it holds. The patents describe how to implement fast-forward and rewind functions in digital video streams. The networking equipment manufacturer filed two lawsuits against Microsoft in a Texas court. Alcatel is seeking an end to the infringement, treble damages, and payment of interest charges and legal costs.

Bull Agrees to Resell JBoss Subscriptions

Bull SA has agreed to resell subscriptions to Red Hat Inc.'s open-source JBoss application server. The agreement between Bull and Red Hat also calls for the French systems and services provider to offer first- and second-tier support for JBoss. Bull also agreed to join the community of developers who contribute to JBoss and to become a JBoss systems integrator partner.

Check Point to Buy Pointsec for $586M

Check Point Software Technologies Ltd. has agreed to acquire Pointsec Mobile Technologies AB for $586 million in cash. Check Point said the move is part of an effort to extend its security offerings to laptops and other remote-access devices. Pointsec develops encryption software for securing data stored on employee laptops, PCs, smart phones and handhelds. The deal is expected to close early next year.

IBM Adds Identity Management Tool

IBM has added a single-sign-on tool to its Tivoli software line. IBM said the new software is a simplified version of its existing federated identity management software. The tool will allow small and midsize businesses to federate their systems with those of their larger business partners, leaving the lion's share of the administration to their partners, IBM said.

ON THE MARK

HOT TECHNOLOGY TRENDS, NEW PRODUCT NEWS AND INDUSTRY BUZZ BY MARK HALL

...BUT I GOT THE SOFTWARE FOR FREE!
I THOUGHT I RULED AROUND HERE.
BILL GATES RULES
CIO
CEO

MATTHEW FAULKNER

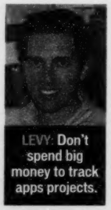
Free Systems Management . . .

. . . software adds spice – and advertising – to your admin's tool chest. Scot Abel, CEO of Spiceworks Inc., says that IT, particularly at small and midsize companies, gets the shaft when it comes to systems management software, which he contends is expensive to buy and overly complex to install and manage. In contrast, Abel claims that his Spiceworks IT Desktop software offers "dramatically simplified" management capabilities. And it's free — as long as you don't mind letting a portion of your screen's real estate be used to show context-sensitive ads. For example, if you're reviewing a printer's status, you might see an ad touting ink-jet supplies. Abel says IT Desktop gives you reports about what software is on your network, the available disk capacity on your storage systems, printer ink levels and much more. In early 2007, look for Spiceworks to add support for logins from multiple accounts and for attachments that contain info about the trouble tickets IT Desktop generates.

15%
Amount of end-user display space dedicated to ads in the Spiceworks software.

Gather your dispersed development team . . .

. . . in a single (virtual) space. Such is the vision of Darren Levy, founder of GatherSpace.com, an online service offered by Levy Consulting Inc. According to Levy, even small and midsize companies like his are using outsourced or offshore developers on software projects. But many can't afford spendy project management tools to keep track of whether a new application's features meet the original specifications. Levy says GatherSpace.com's service is based on the so-called use-case approach to application requirements management, enabling users to prioritize software features, check their status and see how well they match the original requirements documents. "It helps build software by consensus," he claims. Next month, GatherSpace.com plans to add test management tools for quality assurance engineers, and a licensed, on-premises version of the software is due next year Levy says. The online service costs $75 per month for a 20-member project team.


LEVY: Don't spend big money to track apps projects.

'Tis the season to fret about . . .

. . . the online experiences of your Web shoppers. Although it may be a bit late to improve your Web site for this year's holiday season, Keynote Systems Inc. can help you get a jump on the 2007 shopping action with a testing service called Transaction Perspective High Frequency, which it plans to launch in late December. Using Internet Explorer to automatically bang on your site up to four times per hour from as many as 114 locations, Keynote will let you see how shoppers interact with all those Web 2.0 features you've been adding. "You can measure whatever an IE browser can touch," says Abelardo Gonzalez, a Keynote project manager. Among other capabilities, you'll be able to determine how fast pages load and locate performance bottlenecks. Pricing starts at $1,295 per month for testing from 10 locations.

$32B
2006 online holiday sales expected by Jupiter-Research.

Inventory what's on your network, then . . .

. . . manage access to it. "IT has no idea what's connected to their network," contends Lior Tal, CEO of Insightix Ltd. in Ra'anana, Israel. Tal says that's especially true if you're using management frameworks like Tivoli and Unicenter. He claims that they miss a lot, including mobile devices that aren't connected to the network during the inventory process, outsiders who attach to a LAN with static IP addresses and PCs that have active firewalls. You can't get a good idea about what policies to apply for network access until you have a complete inventory, Tal says. His company's Insightix Network Access Control Server is a card-and-software combo that runs on your network's switches and sniffs each packet going by to locate its device of origin. Once you've set policies on access rights, devices found to be out of compliance are placed in quarantine and only permitted to communicate with a remediation server, according to Tal. Version 3.0, which ships this week, provides graphical views of a network's logical connections and lets you sort your systems inventory in a variety of ways, such as Windows PCs with live firewalls. Pricing starts at $5,000.

Don't miss anything when you do a network inventory, says TAL.

Highlight info on the Internet . . .

. . . via an online service. A free, ad-based service offered by i-Lighter Inc. lets end users highlight content on a Web page and save it to a folder as a separate file. According to CEO Marcy Hoffman, you can annotate highlighted content and designate folders for public viewing or keep them private. The service initially works on IE; next week, i-Lighter will add support for the Firefox browser. Hoffman says the company also is working on a licensed enterprise version and on making i-Lighter work with Word and PDF documents. ▸

With competition heating up, how will Air China open new doors abroad?
The new at&t
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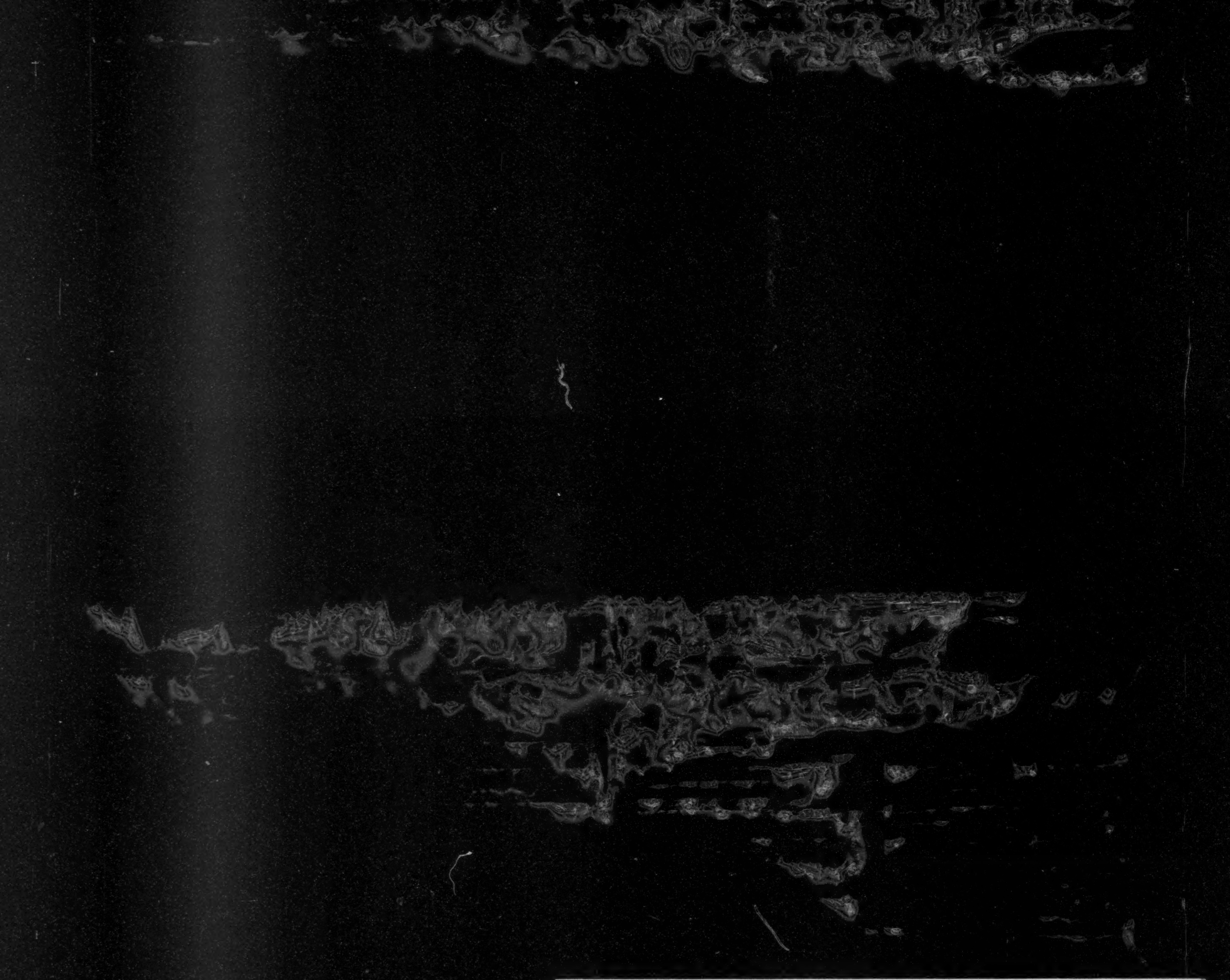

Dynamic Networking. Take Flight.

Competition can be fierce. With competitors giving chase in the domestic market, Air China was fighting to stay on top. But it couldn't hamper its ability to serve more destinations abroad. The plan? Retool its IT systems to streamline operations, accommodate expansion, and provide more of the amenities that travelers expect. The solution: **Dynamic Networking from the new AT&T**.

To address these challenges, the new AT&T created a reliable, scalable solution that's handling millions of transactions per day. All while delivering real-time access to data. Air China is seeing immediate returns by optimizing its reservations, route scheduling and frequent flyer programs. And the renewed vigor is keeping this leader on top.

To learn more about how Air China and other businesses have found success with Dynamic Networking, visit **att.com/profiles**.

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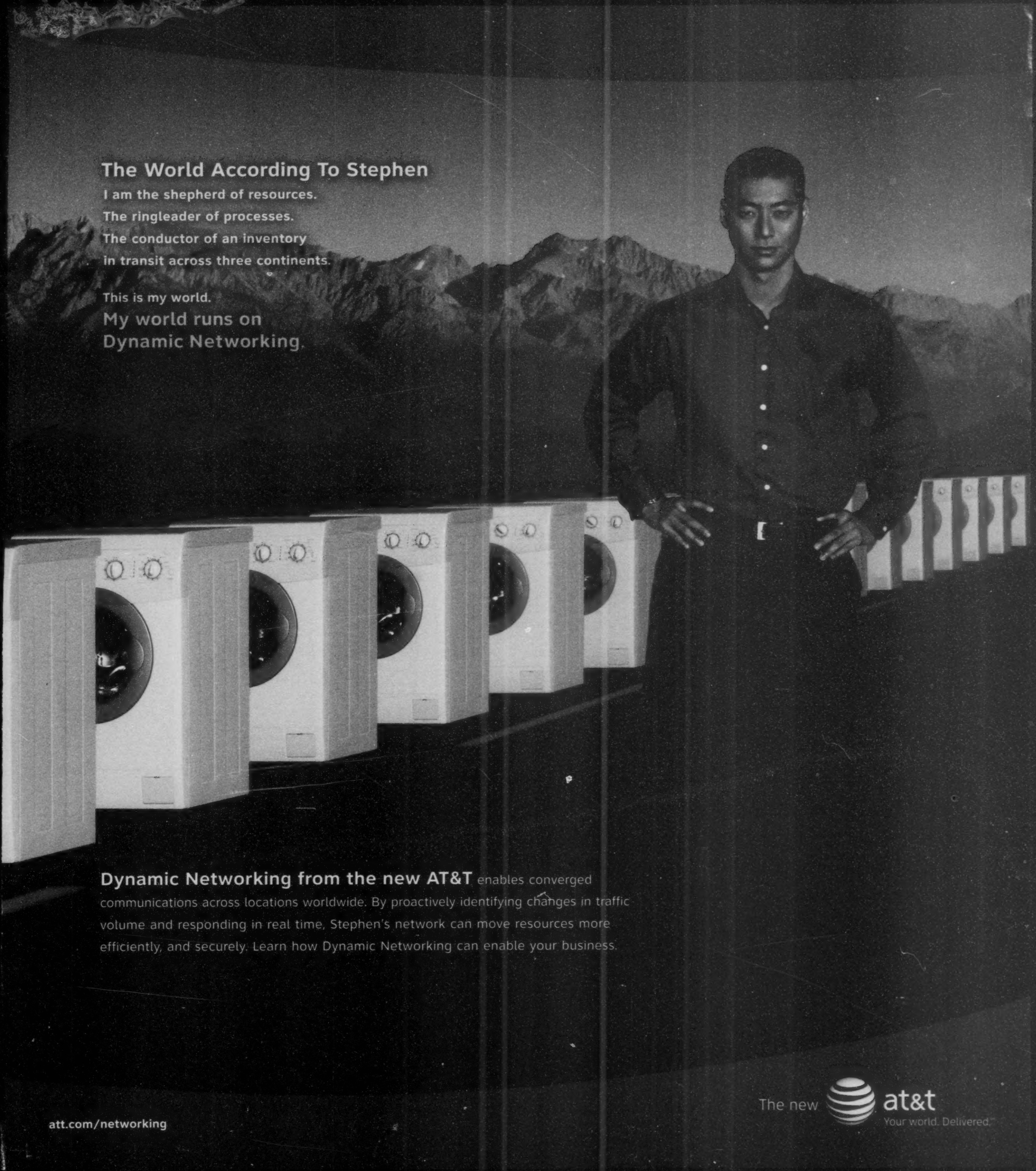

The World According To Stephen

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The conductor of an inventory
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Mich. E-government Site Gets Top Marks

Study grades state, local government sites on usability, other criteria

BY MITCH BETTS

AT MICHIGAN.GOV, citizens can find licensed day-care providers, reserve a campsite, renew licenses and get alerts about road closures delivered to their wireless devices. That helps to explain why Michigan earned top marks in a study, being released today, that grades the Web sites of state and local governments.

The e-government report card is based on an extensive examination of 11,227 official government Web sites conducted by the National Policy Research Council (NPRC), a Washington-based think tank, in collaboration with *Computerworld*. Reviewers judged the Web sites on 25 criteria, including whether people could use them to pay taxes, bid for contracts, find government jobs and complain to local officials about concerns such as potholes.

Michigan received a grade of A+ for its site, followed by Idaho and Indiana, which both received A's, and Nebraska and Utah, which received grades of A-.

Among big cities and counties, the NPRC study gave high marks to Fresno, Calif.; Tampa, Fla.; New Orleans; Montgomery County, Md.; Alameda County, Calif.; and York County, Va. (see chart at right).

The highest grades generally went to Web sites on which a wide range of services could easily be found on the home page instead of being buried several pages deep, said Robert McArthur, the NPRC's e-government project director.

ONLINE

For more detailed charts based on the NPRC's study, visit our Web site: computerworld.com/government

Michigan has made nearly 300 online services available on its Web site, and they're heavily used, according to Jim Hogan, information officer at the Michigan Department of Information Technology in Lansing.

The Web site gets an average of 35.8 million page views per month, he said, and 60 million PDF documents are downloaded from the site annually. Helping drive some of that traffic is a requirement that companies wanting to do business with Michigan must use the Web site's electronic bidding system.

Some of Michigan's newest services include RSS feeds, streaming video of education board meetings and the ability to download the governor's weekly radio address to iPods, said Mike Shanahan, director of the IT department's e-Michigan Web development division, which has 15 staffers.

A common theme among governments with top-ranked sites was a penchant for listening to what local citizens and businesses want via online surveys and comment fields.

Citizen suggestions led Michigan to make its site bilingual and provide a text-only version for people with disabilities, Hogan said.

Similarly, online survey feedback prompted Virginia's York County to allow patrons of its public library to reserve books online until they can get to the library to pick them up, said webmaster Coleen Cason.

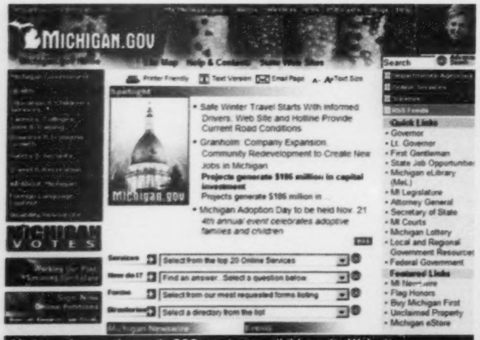
Focus on Services

According to McArthur, one problem with many government Web sites is that they're organized by department, whereas most users want to accomplish a task — like paying a water bill — without necessarily knowing which department is involved. "The best Web sites offered on the home page a menu of all government services regardless of department," he said.

Another problem uncovered by the NPRC study is outdated information on official government Web sites. "Either maintain its currency and accuracy, or shut it down," McArthur said. "Bad information is worse than no information."

A few sites examined in the study looked abandoned, he added — cases in which small governments apparently paid service providers to set up Web sites for them but then let their contracts expire.

E-gov't, page 12



- Safe Winter Travel Starts With Informed Drivers: Web Site and Hotline Provide Current Road Conditions
- Granholm: Company Expansion, Community Redevelopment to Create New Jobs in Michigan

Projects generate $186 million in capital investment

Projects generate $186 million in ...

- Michigan Adoption Day to be held Nov. 21
4th annual event celebrates adoptive families and children

Select from the top 20 Online Services

Find an answer. Select a question below

Select from our most requested forms listing

Select a directory from the list

Michigan has made nearly 300 services available on its Web site.

REPORT CARD

Best Government Sites

The NPRC gave the following state and local government Web sites top grades for overall usability and e-government capabilities:

Top State Web Sites

Grade	State	URL
A+	Michigan	www.michigan.gov
A	Idaho	www.accessidaho.org
A	Indiana	www.in.gov
A-	Nebraska	www.nebraska.gov
A-	Utah	www.utah.gov

Top County Web Sites

Population of over 250,000:

Grade	County	URL
A+	Montgomery County, Md.	www.co.mo.md.us
A+	Alameda County, Calif.	www.co.alameda.ca.us
A	Los Angeles County, Calif.	http://lacounty.info/
A	Sacramento County, Calif.	www.saccounty.net
A	Broward County, Fla.	www.co.broward.fl.us
A	Seminole County, Fla.	www.seminolecountyfl.gov

Population of 50,001-250,000:

Grade	County	URL
A+	York County, Va.	www.yorkcounty.gov
A	Leon County, Fla.	www.co.leon.fl.us
A	Martin County, Fla.	www.martin.fl.us
A	St. Johns County, Fla	www.co.st-johns.fl.us
A	Columbia County, Ga.	www.columbiacountyga.gov
A	Buncombe County, N.C.	www.buncombecounty.org
A	Deschutes County, Ore.	www.deschutes.org
A	Loudon County, Va.	www.loudoun.gov

Top City Web Sites

Population of over 250,000:

Grade	City	URL
A+	Fresno, Calif.	www.ci.fresno.ca.us
A+	Tampa, Fla.	www.ci.tampa.fl.us
A+	New Orleans	www.cityofno.com
A	Washington	www.dc.gov
A-	Houston	www.houstontx.gov
A-	Virginia Beach, Va.	www.vbgov.com
A-	Seattle	www.seattle.gov

Population of 50,001-250,000:

Grade	State	URL
A+	Huntsville, Ala.	www.ci.huntsville.al.us
A+	Chandler, Ariz.	www.chandleraz.gov
A+	Augusta, Ga.	www.augustaga.gov
A+	Beaverton, Ore.	www.beavertonoregon.gov

METHODOLOGY: Trained reviewers visited 11,227 official state and local government Web sites and awarded them points for 25 features in seven categories: usability, citizen responsiveness, accessibility for disabled visitors, information tools, online procurement, job opportunities, and interactive permits and payments. No surveys were involved.

SOURCE: NATIONAL POLICY RESEARCH COUNCIL, WASHINGTON

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IT Unready for New Rules On Electronic Evidence

As Dec. 1 deadline looms, survey finds some ignorant of new requirements

BY SHARON FISHER

MANY COMPANIES don't appear to be prepared for new federal rules slated to take effect Dec. 1 for electronic discovery of documents in civil cases, according to a survey conducted this month by *Computerworld*.

About 32% of 170 IT managers and staffers surveyed said they aren't prepared to meet the requirements of the federal edict, 11% said they are somewhat prepared, while 42% said they don't know the status of their companies' preparation.

The new rules specify requirements for submitting electronic documents — likely including e-mail and perhaps instant messaging logs, depending on future case law — as evidence in civil litigation.

The rules were recommended in September 2005 by the Judicial Conference of the U.S. Supreme Court's Committee on Rules of Practice and Procedure.

The rules, described in a 300-plus-page document compiled by the conference, require that companies involved in civil litigation meet within 30 days of the filing to decide how to handle electronic data. The firms must agree on what records are shared and on which electronic format.

Past decisions by courts indicate that penalties for failure to comply could be harsh — and costly. Morgan Stanley was fined $1.5 billion in May 2005 when a judge ruled that it had failed to preserve electronic information.

James Brady, e-mail administrator in enterprise information services at Cedars-Sinai Health System in Los Angeles, said at *Computerworld*'s Storage Networking World conference in Orlando earlier this month that the rules are a "looming new problem."

Brady said he spent six months lobbying Cedars-Sinai management to prepare to comply with the rules. The company is spending $5,000 per month copying tapes to make sure data is available.

Don Green, manager of accounting and information systems at Texas Aromatics LP, a petrochemical company in Houston, said he wasn't aware of the impending rules changes before receiving the *Computerworld* survey.

Green plans to work with the company's legal counsel to ensure that the mandates are met.

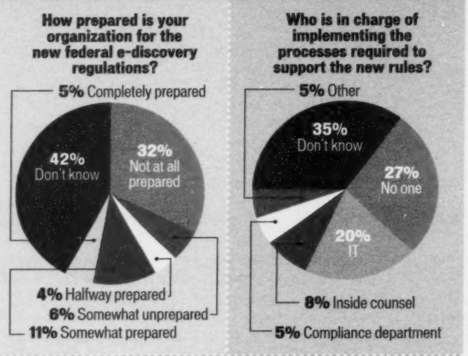
Jack McLaine, assistant vice president of MIS at Leesport Financial Corp., said the Wyomissing, Pa.-based financial services firm began taking steps to meet the requirements a year and a half ago — before work on the new rules was officially completed.

"We knew it was coming," he said. "We couldn't say, 'We'll do it next year.' We said, 'We've got to do this now.' "

Leesport spent $60,000 to set up an e-mail archiving system, including document scanning, based on Permabit Inc.'s Dynamic Information Services document management product, McLaine said.

John Bace, an analyst at Gartner Inc., said that organizations should quickly take steps to develop document retention policies and content management procedures to help protect the organization in case documents are lost. ▸

Ready or Not



Base: 170 IT professionals
SOURCE: COMPUTERWORLD ONLINE SURVEY, NOVEMBER 2006

Continued from page 10

E-gov't

E-government generated a lot of excitement in the late 1990s, but the development of online government services has stalled in many locations, said Rob Atkinson, president of the Information Technology and Innovation Foundation in Washington.

"It's surprising how poor many government Web sites are to this day," he said. "They're poorly organized, and most e-government applications are still very agency-centric, rather than focusing on what would make sense to the citizen."

Darrell West, a professor of political science at Brown University, said that the movement toward e-government has lost some momentum because of skimpy budgets.

"In the long run," West said, "I'm optimistic about the future of e-government, but the revolution is going to take longer than people thought a decade ago."

Revitalizing e-government will require more online interactivity, according to both Atkinson and West. That could mean adding wizards that walk Web site users through complicated processes, or new features that allow citizens to participate in their governments' decision-making processes.

27,760
Number of local governments that have no official Web site.

In Michigan, the IT department is working on mobile applications for tasks that people want to accomplish on short notice, Hogan said. For example, one future application will let people who book charter fishing tours use handheld devices to buy 24-hour fishing licenses. "These guys show up at the dock at 4:00 in the morning, and the skipper finds out they don't have their fishing license," he said.

Michigan also ranked No. 1 in the 2006 Digital States Survey, which was conducted in June by the Center for Digital Government in Folsom, Calif. "We try to stay on the cutting edge," Hogan explained, "to make sure we're doing it first and doing it better." ▸

DESIGN RECOMMENDATIONS

The Web sites of state and local governments should do the following:

- Indicate on the home page that they are official governmental sites.
- Include a direct online payments link on the home page.
- Explain how contractors can do business with government agencies or departments.

SOURCE: NATIONAL POLICY RESEARCH COUNCIL, WASHINGTON

Lack of Standard URL Format Creates Confusion

THE STUDY OF state and local government Web sites by the National Policy Research Council found a complete lack of standardization in both the URL formats and the top-level domains the sites use.

For example, the NPRC said that California's Alameda, Los Angeles and Sacramento counties use the following URLs, respectively: *www.co.alameda.ca.us*, *http://lacounty.info* and *www.saccounty.net*.

The problem is that the different naming conventions can sow confusion about whether a particular Web site is an official government site or an unofficial one set up by an organization such as a chamber of commerce or a visitors' bureau, the NPRC said in its report.

The most common top-level domains among state and local government sites are .org, .com and .us, but some use .net, .gov or .info, according to the NPRC.

The organization also found 18 local governments that use the country codes of foreign nations.

For example, the Web site for the town of Hempstead, N.Y., which can be accessed at *http://toh.li*, uses the country code of Liechtenstein in an attempt to signal that the town is located on Long Island.

Other country codes used by local governments, the NPRC said, include those of Montserrat (.ms), Samoa (.ws) and Tonga (.to).

– MITCH BETTS

For all stories go to www.microsoft.com/getthefacts

Microsoft

The Highly Reliable Times

VOLUME 1 – ISSUE 1

Windows Server 2003

LONDON STOCK EXCHANGE CHOOSES WINDOWS OVER LINUX FOR RELIABILITY

London
STOCK EXCHANGE

Tom Nagy for The Highly Reliable Times

THE HEADQUARTERS BUILDING of the London Stock Exchange, located in London's Paternoster Square.

Reliability Is Key in the "World's Capital Market"

By MICHAEL BETTENDORF

LONDON, Oct. 2006 — When an IT system must process 15 million real-time messages per day, with peaks at 2,000 messages per second, even one second of downtime counts. That's the pressure the London Stock Exchange faced when building Infolect, the Exchange's real-time stock-ticker information delivery system.

The solution had to have rock-solid reliability, nothing less. "Reliability is one of the key attributes of the Exchange in its technology systems. These systems have to work every day, 24/7, to make sure the markets are there," said CIO David Lester, who evaluated both Linux and Microsoft® Windows Server® 2003 for the Exchange's core technology systems. "We looked at a number of different platforms for our Technology Roadmap, and we lined up our business requirements with the capabilities of those platforms, and Windows Server was the clear choice."

In Lester's view, long-term reliability is a function of a solid relationship: "We wanted a deep partnership with an organization that could deliver the kind of mission-critical technology that we needed, and we felt Microsoft delivered just that."

For the full London Stock Exchange case study, plus other case studies and independent research findings on the reliability of Windows Server versus Linux, visit us at microsoft.com/getthefacts

LESTER SPEAKS OUT:

"We looked at a number of different platforms for our Technology Roadmap, and we lined up our business requirements with the capabilities of those platforms, and Windows Server was the clear choice."

–David Lester, CIO,
London Stock Exchange

BREAKING NEWS:
London Stock Exchange Achieves Record Reliability

David Lester, Chief Information Officer of the London Stock Exchange, cites Windows Server as key to maintaining system reliability and performance. *— Continued on Page B3.*

Federal Rules May Not Fully Secure Online Banking Sites

IT execs say banks and credit unions need more than strong authentication

BY JAIKUMAR VIJAYAN

FINANCIAL institutions that truly want to bolster their online security need to look beyond the federal guidelines on end-user authentication that go into effect Jan. 1, IT managers and analysts said last week.

The guidelines, issued last year by the Federal Financial Institutions Examination Council (FFIEC), call on banks and credit unions to adopt so-called strong authentication measures for protecting online customers against identity theft and other types of fraud.

The FFIEC's requirements have gotten the financial services industry to turn its attention to the issue of online security, said Gartner Inc. analyst Avivah Litan.

No Silver Bullet

But strong authentication "certainly isn't a silver bullet," said Melissa Auchter, CIO at Parda Federal Credit Union in Rochester, Mich. "It just protects one doorway. It's one more measure in a comprehensive approach to protecting the assets of our members."

Early this month, Parda finished rolling out a multifactor authentication tool from BioPassword Inc. that uses a combination of standard log-in credentials and information about the keyboard typing rhythms of users to control access to their accounts. But Auchter said Parda has also invested in a layered set of defenses, including transaction-level fraud monitoring.

For the past year, the University of Wisconsin Credit Union in Madison has been using software from Corillian Corp. to authenticate its online users during log-in and, to a limited extent, in the transaction stage. Eric Bangerter, the credit union's director of Internet services, said the software lets the financial institution profile users' systems and online behavior and then challenge them to provide extra proof of their identity if any changes from the norm are detected.

The credit union also plans to add a stronger "out-of-band" process, in which automated phone calls will be made to account holders if there's still reason to doubt their identity, Bangerter said.

> **"[Strong authentication] certainly isn't a silver bullet. It just protects one doorway.**
>
> **MELISSA AUCHTER,** CIO, PARDA FEDERAL CREDIT UNION

That is necessary because phishers have already begun to find ways to compromise most challenge-and-response forms of strong authentication, he noted. "Eventually," Bangerter said, "I would like to eliminate the challenge questions completely because they don't add much to security."

Under the FFIEC's guidelines, banks and credit unions are supposed to augment single-factor authentication processes — typically based on a username and password — with a second form of authentication by year's end.

The guidelines aren't a formal mandate, but the FFIEC plans to start auditing financial institutions for compliance with them next year.

Don Phan, an analyst at Javelin Strategy & Research in Pleasanton, Calif., said online fraudsters have already found a way to break the one-time passwords that some banks have begun using as a second form of authentication.

Because banks are being asked to focus largely on front-end access controls, "we don't consider the FFIEC guidance alone to be strong enough to make the consumer safer," Phan said. "Financial institutions must set their goals higher." He recommended the use of risk assessment and alerting measures at log-in and for real-time monitoring of an account holder's activities online.

Chad Graves, vice president of IT at Ent Federal Credit Union in Colorado Springs, said the FFIEC's guidelines should be adequate for dealing with current threats such as phishing. But he said that Ent Federal may have to add transaction-level controls if it decides to support electronic clearinghouse or wire-transfer transactions. ◗

Continued from page 1

BI Tools

officials declined to provide more details on the suspected fraud. But they did say that the county has saved millions of dollars since 2003, when it started using BI tools to analyze claims data.

Several counties in New York are turning to BI tools to help cull through millions of claims to identify potential cases of fraud and misuse, said Stephen Acquario, executive director of the Albany-based New York State Association of Counties.

Before putting the tools in place, counties had no easy way to estimate what their weekly Medicaid bill from the state would be, according to officials in several counties.

Albany County last month began using Salient Performance Management (formerly called Muni-Minder) software from Salient Corp. to analyze data stored in the state's Medicaid data warehouse to detect patterns that might indicate abuse, said Beth Berlin, commissioner of the Albany County Department of Social Services.

The Salient software is designed to provide access to transactional data and other information for analysis, said Guy Amisano, president and co-founder of Salient. The results are displayed graphically to help users detect questionable activity, he said.

ACQUARIO: "Anecdotes are no longer going to be the norm."

CLEMENT: Tools helped reduce Medicaid bill by $1M.

Albany County has appropriated $57 million to pay its Medicaid costs in 2007, Berlin said. Because that amount is so high, "we are interested in looking at the claims to determine if there is any pattern . . . of activity that is outside of the norm that would indicate that there might be a need for a more intimate review of what is going on in that provider's organization," she said.

Potential Returns

Onondaga County is using the same Salient software to flush out Medicaid fraud, Morgan said. The county paid $200,000 for it and will pay $30,000 annually for maintenance, he said.

The county hopes that fraud investigations, like the ongoing analysis of prescription data, will result in some recipients being placed in less expensive Medicaid programs that limit their treatment to a single doctor and pharmacy.

Nassau County has been using statistical analysis and data mining tools from SPSS Inc. for three years, said Peter Clement, assistant commissioner of the county.

The county first used the tools to examine claims filed by transportation companies for the cost of bringing recipients to doctors appointments. The county identified $50,000 in billings for 2003 that had no matching treatment claims, Clement said. He noted that the 40 companies providing transportation "all know we are monitoring it now and [are] looking at [claims] through these different tools."

From 2004 to 2005, he added, the county's Medicaid transportation bill decreased from $10 million to $9 million. "We can't prove it, but we obviously attribute [the decrease] to the tools," Clement said.

Acquario said that BI tools are helping county officials throughout the state prove what they have long suspected — that fraud and misuse are contributing to the substantial growth of Medicaid claims.

"Anecdotes are no longer going to be the norm," he said. "Now, through statistical-driven reporting . . . we're able to back up what we had suspected in ways we were not able to do in years past."

Because New York spends more than any other state on Medicaid services — $44 billion worth in 2006 — it is important for the state to control its costs, Acquario said. New York is also home to one of the nation's largest Medicaid populations. He noted that the state must be prepared for any federal government move to increase its share of Medicaid costs. "The stakes are high for the state of New York," he said.

Wayne Eckerson, director of research at The Data Warehousing Institute, said that fraud detection is one of the biggest uses of data mining and predictive analytics tools. ◗

Bank of America VoIP Project Is on Track, Exec Says

Despite slow start, 180,000 IP phones still slated to be installed by early 2009

BY MATT HAMBLEN

Craig Hinkley, *senior vice president of network services at Bank of America Corp., is overseeing a voice-over-IP project that will bring 180,000 IP phones to the bank's U.S. operations by early 2009. Electronic Data Systems Corp. is handling the installation and ongoing support. In an interview with* Computerworld *this month, Hinkley spoke about the state of the project, which began about two years ago.*

Is the VoIP project, which you talked about at VoiceCon in February 2005, still on target, and what is the overall plan? Yes, the target is still 180,000 [Cisco] IP phones, and it's going along nicely. We've got the program split into three areas — branch retail, enterprise and call centers — to focus on each subprogram and to get it running without trying to boil the ocean, so to speak.

Of 180,000 total phones, we [will] have roughly 60,000 in retail, 60,000 in enterprise and 60,000 in a number of contact centers. We first focused on retail, with 6,000 branches, and had to get that program up and running. It's doing well, with 800 out of 6,000 branches completed. We are doing this with EDS, which will deploy and manage it.

What is the status of the enterprise and contact center projects? We've completed 50 enterprise locations. We're kicking off the contact center effort before the end of the year. The first location will be a medium-size contact center for internal operations used to serve bank associates in the Charlotte, N.C., area.

How many phones are installed today? We are north of 20,000. What we've done in the last 18 months is focus on establishing the program, processes and standards of what we're deploying. We've had lot of conversations with divisional executives about how we want VoIP nationally to support business processes.

It's not just been a technology transformation, but [also] a business process transformation.

With but 20,000 out of 180,000 phones installed after two years, are you still on schedule? We are a little off pace on the schedule, but that's not [because of] the technology. We started a little slower out of the gate, to understand how to use the technology in our environment.

When will the project be completed? We still have our program completion set for late 2008 or early 2009. While we went out slower than expected, we still have enough runway to meet our commitments.

What will the project cost? We're a bank. We don't go there. It's confidential.

Is the new technology providing adequate phone service in areas such a voice quality? From a quality and technology perspective, it's working extremely well. We went through a process of making sure that we provide [a] level of service that is comparable to what users had before.

Did you have to upgrade the IP network to ensure adequate quality? In terms of the upgrades, the bank has been executing [a long-term strategy] for more than three years. We had implemented an Optical Carrier 49 dual-IP backbone over three years ago. So we already had a backbone speed capability to support bringing voice communications onto the infrastructure. We had refreshed a significant portion of our network switches as part of a standardization program.

Have there been any problems bringing together voice and data IT workers? It was not a problem, but candidly, it was a potential factor we recognized at the start. We clearly clarified that this project was a transformation, not just from a technology perspective, but from a people and process perspective. We worked with them to make sure that integration within the voice and data teams occurred from Day One.

Have you added any new communications features, such as unified voice mail and e-mail? Candidly, we have not yet deployed unified communications in terms of a single box for e-mail and voice mail. We'll be phasing that in over time. We won't wait until 2008 but will layer that in.

How has this project gone for you personally? There's certainly been pain, because you are going through such a transformation across people, process and technology. You are impacting business processes and the way the associates interact with technology. There's been pain in that, but that's been countered by the fact that the technology worked well, and we've had a good, solid base to work from; we've had good, solid executive support for the program. ◗

Some Vendors, Analysts Question Stack Promises

BY ERIC LAI

Vendors are scrambling to offer open-source application stacks as an alternative to integrated sets of proprietary applications that have long locked users into the technology of a single supplier.

Some vendors and analysts, however, are quick to criticize the emerging stacks, contending that they could lock in users the same way integrated stacks of a single vendor's applications have in the past.

Vendors hawking open-source application stacks whose integration is precertified include Hewlett-Packard Co. and IBM, Linux purveyors Red Hat Inc. and Novell Inc., and independent support providers such as SpikeSource Inc., SourceLabs Inc. and many others.

"Stacks are rigid and deterministic," said Winston Damarillo, CEO of Simula Labs Inc., an open-source software provider in Marina del Rey, Calif. They are "prefab solutions, which most customers don't really want," he said.

Simula Labs earlier this month announced its Community-oriented Real-Time Network (Core), which the company described as a flexible framework for building, running and managing open-source software. Simula Labs also announced that open-source software providers Covalent Technologies Inc., LogicBlaze Inc., Megere Inc., WebTide and Chariot Solutions have agreed to support Core.

The Core offering allows users to customize open-source stacks, offering more flexibility than the precertified stacks, Damarillo said.

Davis Tharayil, CIO at Home Insurance Co. in New York, is in the process of testing another alternative to a precertified open-source application stack: a custom server appliance from Raleigh, N.C.-based rPath Inc. that's designed to integrate Ingres Corp.'s open-source database with a stripped-down version of Linux.

Home Insurance tested the appliance as part of its search for a lower-cost alternative to Oracle databases running on Solaris-based servers.

Tharayil said that the insurer did not consider emerging precertified open-source application stacks in its search for a plug-and-play product. "A full stack just wasn't necessary," Tharayil said. "I've been in the business for 35 years. Every time something new comes along, they say it's a silver bullet. I still haven't found one."

> "I've been in the business for 35 years. Every time something new comes along, they say it's a silver bullet. I still haven't found one.
>
> **DAVIS THARAYIL,** CIO, HOME INSURANCE CO.

Dennis Callaghan, an analyst at The 451 Group in New York, said the rPath model is impressive, though he noted that the company has "a pretty small niche and customer base at this point."

James Governor, an analyst at RedMonk, a Denver-based consulting firm, said the tidiness of open-source stacks will likely continue to appeal to some customers despite their rigidity. He suggested that the true standards-based component modularity promised by service-oriented architectures will likely make the current stacks less relevant.

Application stacks have a long history among mostly large vendors of proprietary software, such as Microsoft Corp., IBM and Oracle Corp. Such vendors contend that their integrated software products can boost interoperability and cut costs, though suppliers of best-of-breed software often note that such products also lead to vendor lock-in.

To date, the task of integrating open-source software is mostly the responsibility of corporate users — or their highly paid consultants. Such projects could easily wipe out the savings from using free software. ◗

GLOBALDISPATCHES An International IT News Digest

Satyam Plans to Boost Its Workforce in China

HYDERABAD, INDIA

SATYAM Computer Services Ltd., a software development and IT services firm based here, announced plans this month to increase its workforce in China from about 400 employees to 3,000 or so by 2008.

Satyam plans to expand its services business inside China and set up new service-delivery centers for customers in Japan and Hong Kong, said Raghavendra Tripathi, who heads the outsourcer's operations in China. The new staffers will also provide offshore services to North American companies.

Tripathi said Satyam is expanding in China in order to help ensure that it has an adequate number of workers to support its business in the long term. "We are growing fast, and India may not be able to meet all our staff requirements down the line," he said.

The employees in China will work at existing software development facilities in Shanghai and Dalian, a sales office in Beijing and a new development center at the Guangzhou Software Park.

■ JOHN RIBEIRO, IDG NEWS SERVICE

GLOBAL FACT

$10.9B

The size of the IT outsourcing and managed services market in the Asia-Pacific region (excluding Japan) during the first half of 2006. The market for the full year is expected to reach $23 billion, up 12% from last year's level.

SOURCE: IDC, FRAMINGHAM, MASS.

Trade Group Opposes Open-Source Proposal

MAKATI CITY, PHILIPPINES

THE Philippine Software Industry Association is opposing a bill in the country's legislature that seeks to mandate the use of open-source software by government agencies and public schools.

The Free Open Source Software Act of 2006 is scheduled for a hearing in Congress this month. Teodoro Casino, the House of Representatives member who proposed the bill, has said that the open-source requirement would level the playing field for local software vendors competing against bigger foreign vendors.

But the software trade group, which is based here, contends that the bill could hamper the growth of the local software industry and would limit the government's ability to choose the IT products that best meet its needs.

■ LAWRENCE D. CASIRAYA, COMPUTERWORLD PHILIPPINES

NEC Files Complaint Over Telstra's Pricing

CANBERRA, AUSTRALIA

NEC CORP.'S subsidiary in Australia filed a complaint with the Australian Competition and Consumer Commission (ACCC) this month over the price it is being charged to access Telstra Corp.'s telecommunications network.

NEC Australia Pty.'s Nextep Broadband division is the latest service provider to contest Telstra's prices for connecting to its so-called unconditioned local loop service. Telstra, which is majority-owned by the Australian government, raised some of its access prices after proposing late last year that it be allowed to institute a single monthly charge across all regions.

But the ACCC rejected Telstra's proposal in August, saying it wasn't satisfied that the terms were reasonable. The commission disclosed late last month that it had made interim findings in pricing disputes between Telstra and five other companies. The ACCC has declined to comment about NEC's complaint.

■ HOWARD DAHDAH, COMPUTERWORLD AUSTRALIA

Compiled by Mike Bucken.

Briefly Noted

Dell Inc. has set up its fourth customer support center in India, in the city of Gurgaon. The new facility is expected to employ about 1,000 people by year's end, said Dell, which also operates support centers in Bengaluru, Hyderabad and Chandigarh. The Gurgaon site will support users in the U.S. and Europe.

■ JOHN RIBEIRO, IDG NEWS SERVICE

Nokia Corp. has released a security appliance that includes intrusion-detection software developed by Sourcefire Inc. in Columbia, Md. The Nokia Intrusion Prevention appliance is designed to help companies better secure their networks as employees access corporate data remotely. The device starts at $14,995 (U.S.) and is available as part of Nokia's IP390 security system.

■ NANCY GOHRING, IDG NEWS SERVICE

SAP AG has named Geraldine McBride president of its Asia-Pacific operations and a member of its global field leadership team. McBride, formerly head of SAP's operations in Australia and New Zealand, now will be based in Singapore. She succeeds Hans-Peter Klaey, who has been chosen to lead a new unit focused on small and midsize users.

■ SANDRA ROSSI, COMPUTERWORLD AUSTRALIA

Borland Rejects Five Bids for Tools Unit

BY HEATHER HAVENSTEIN

Borland Software Corp. has created a wholly owned subsidiary to run its tools business after an effort to sell the unit failed. In a recent interview with Computerworld, **Rick Jackson**, *Borland's chief marketing officer, talked about the new CodeGear subsidiary, the company's place in the application life-cycle management (ALM) business and its third-quarter financial deficit.*

Why did Borland decide not to sell the development tools group? It came down to about five bidding parties. Since the developer tools group has historically been so intertwined with Borland operationally, it became difficult for us to break out specific revenue [figures for potential buyers] — how much revenue to attribute to developer tools and application life-cycle management. At the end of the day, we did not feel we were going to receive the appropriate value for [the developer tools division]. To maintain the value for our shareholders and still take care of our customers . . . we made the decision to drop it down to a wholly owned subsidiary.

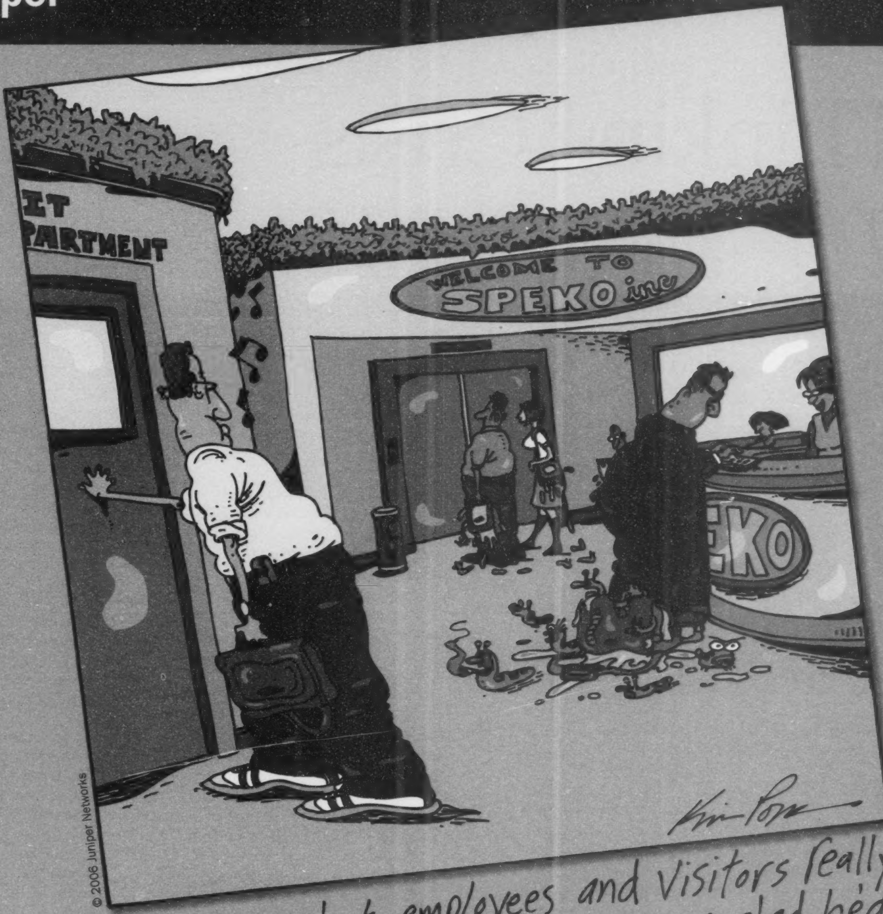
Will CodeGear prevent the tools business from continuing to drain corporate resources, which CEO Tod Nielsen had said was the reason for selling it in the first place? The move is to separate it as a stand-alone subsidiary. [CodeGear] has its own management team, its own brand, its own sales and marketing organization. There will be no employees shared. It will be operated as a stand-alone business.

In the announcement this month of Borland's third-quarter loss of $12.2 million, Nielsen said that there will be "significant attention on reducing costs." Can you elaborate on that? At this time, we are not commenting. The executive team is working on a second pass at the operational plan . . . with a focus on profitability. We anticipate discussing that more during our fourth-quarter call in February. We are really focused on making sure we can continue to drive growth this year.

The ALM business is more competitive now than the tools business. How will Borland differentiate itself in ALM? Our top competitor is really IBM. Microsoft has a very strong developer following. They haven't done as well in the ALM space. We are taking market share. We have replaced IBM in several large accounts — at Kaiser Permanente and Electronic Data Systems.

Borland has a much more open approach to ALM. Borland offers a choice of using our tools with your specific process, versus the IBM approach, which is they try and force everyone to use their specific process, the Rational Unified Process. Whether you use WebSphere [from IBM] or WebLogic from BEA or Fusion from Oracle or NetWeaver from SAP, we support all of those equally well. Rational focuses all their efforts on supporting WebSphere.

How have both ALM and tool users reacted to the decision to keep the development business? We have a customer advisory board with 20 to 25 customers in North America that helps us with strategy. The feedback was positive because it showed Borland's commitment. We're not just going to dump our tools business. We're going to ensure it is taken care of. [Borland and CodeGear] do share customers. It is critical that we continue to support those customers. ▸



Seeing what employees and visitors really had on their laptops, Bert was glad he'd gotten Juniper's Unified Access Control solution.

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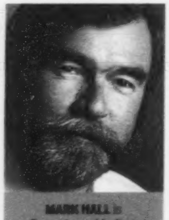
MARK HALL

Thinking Crisis

WHETHER you call them the millennium generation, the Google generation or digital natives, most school kids today are considered not merely comfortable with computers, but experts with them. Why, they've had PCs at home and in the classroom since, like, um, forever.



MARK HALL is a *Computerworld* editor at large. Contact him at mark_hall@computerworld.com.

And just watch their thumbs fly across the tiny keypads on handhelds, text-messaging and IMing their friends; see them quickly vanquish virtual enemies on their Xboxes and PlayStations with aplomb. It's little wonder, then, that some have anticipated the arrival of these technoprodigies as, well, a millennial event.

Like, no way, dude.

Less than two weeks ago, I chatted with senior developer Teresa Egan and senior research scientist Irvin Katz at the Educational Testing Service. (Yes, the same ETS that creates the dreaded SAT, GRE and other standardized tests.) What they told me completely shreds the notion that this generation of tech-saturated kids is any better prepared for business or academic careers than my generation was because some of us were adept with the slide rule and compass.

ETS, together with seven major universities and colleges across the nation, devised a way to test students on their information and communication technology (ICT) literacy. What they learned from more than 6,300 test results is distressing.

For example, only 52% of college students and high school seniors were able to determine whether information on a Web site was objective, skewed or plain screwy. Only four out of 10 of this so-called Google generation knew that using multiple terms in an online search improved the results. (Don't ask if these kids know anything about Boolean searches.) And only 44% were able to complete an online assignment and communicate their findings to others with accuracy.

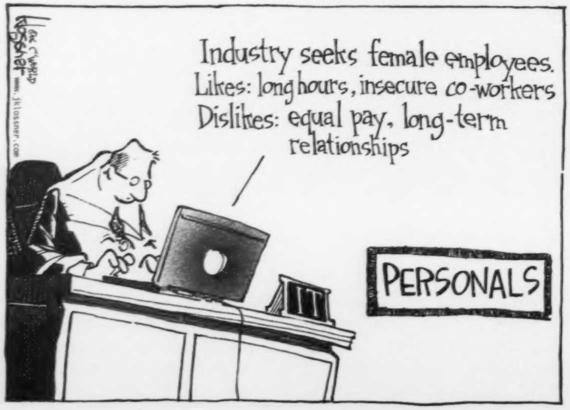
So, while we've showered our children with technology, we've overlooked how they think. "It was false to assume that if we gave kids technology they would also acquire the critical thinking skills to use it effectively," concludes Egan.

Mastering the use of mice and menus is not the same as critically evaluating a problem. Our schools are producing a generation of U.S. workers who understand the intricacies of twigs and branches but can't grasp that they are looking at a tree and standing in a forest. So, it's not surprising when CIOs and other business leaders regularly tell *Computerworld* that they continue to look overseas for new hires, as they did again last week in our cover story, "Fishing in the Global Talent Pool."

Thankfully, not all of our kids are digital idiots. A new book, *Young Wealth: Trade Secrets From Teens Who Are Changing American Business*, by *USA Today* reporter Jon Swartz, chronicles the successes of ICT-savvy kids who have used their technical talents, ambition and constructive thinking to create careers, build companies and, indeed, make the world a better place. However, given the statistical rigor of ETS's testing versus Swartz's fascinating anecdotes, I suspect that he has mined the rare gems, while most kids remain diamonds in the rough.

It's time adults stopped arguing about whether students should use Macs or Windows machines or study Java or C# in the classroom. That's branch and twig thinking. We need to develop creative critical thinkers, because as I look ahead, the problems in business and the world are becoming more complex, not less so. And, yes, our kids will use technology to help solve those problems. But they'll have to know how to think critically first. ▸

Don Tennant will return next week.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THORNTON A. MAY

The What And Why Of CPOs

FIVE YEARS ago, *privacy* was a white-hot noun. Global 2,000 organizations were falling all over themselves trying to establish privacy organizations and policies. At that time, security guru Bill Malik, former head of Gartner's security practice, commented, "The chief privacy officer is a trend whose time has come."

Fast-forward to today. We are still waiting for the high-impact, change-my-stock-price and delight-my-customer CPO to show up and make his presence felt organizationally.

THORNTON A. MAY is a longtime industry observer, management consultant and commentator. Contact him at thorntonamay@aol.com.

In 2006, many futurists believe we may be standing at the beginning of the largest and most life-changing technology expansion since the invention of fire. (Interestingly, it is Sarbanes-Oxley — initially labeled as an innovation-sucking bit of legislation that would do little more than provide full employment for bureaucrats — that may be viewed in the end as the great accelerator toward a truly digital society.) Future-focused organizations are getting their information management houses in order and tightening up internal processes in advance of the big takeoff. Among the things most in need of rethinking are privacy management and the chief privacy officer.

It's worthwhile, then, to consider questions regarding what CPOs do and why they're needed.

What Do CPOs Do?

I would appreciate hearing from readers who can answer that question. The fact is that privacy professionals are, for the most part, invisible to corporate, societal and consumer decision-makers. As an anthropologist studying corporate and consumer tribes, one of my tasks is to chronicle the daily routines and experiences of decision-makers. In the course of my fieldwork, I've determined that privacy professionals occupy just about zero mind share. Why is this?

Readers may be surprised to learn that there is a privacy industry. The International Association of Privacy Professionals (IAPP) has 2,800 members in 23 countries. J. Trevor Hughes, the articulate, well-read and very well-traveled executive director of the IAPP, frequently and eloquently comments on the critical role of today's privacy professionals, who he maintains "are guardians of the data that fuel our information economy."

But most privacy tribe observers agree that privacy people pretty much keep to themselves. They are *too* private. Similar to the Amish, they don't get out much, and when they do, it is to gather in self-selected conclaves. Most privacy events revolve around privacy people speaking to privacy people.

What Is Society's Attitude Toward Privacy?

Part of the problem is that privacy is not front-of-mind for Joe and Jane Bag-o-Donuts. Robert Samuelson, writing in *The Washington Post* on Sept. 20, contends that the "Internet has unleashed the greatest outburst of mass exhibitionism in human history." A recent poll by the Pew Internet & American Life Project reports that 61% of all 13-to-17-year-olds now have personal profiles on the Web. Katharine Herrup, a cultural and style observer writing in *The New York Sun* on Sept. 22, said she is convinced that "Americans do want privacy. They just struggle with deciding how much exhibitionism is too much. And they don't seem to know how to set their own privacy meters."

The Demand and Supply For Privacy

We are still a ways off from having an unambiguous take on consumers' demand for privacy. People have not really made up their minds about how private they want to be. The supply of privacy is suspect as well. An RSA Security study found that nearly half of U.S. consumers have "little or no confidence" that organizations are taking sufficient steps to protect their personal data. And when a Ponemon Institute/MSNBC study asked, "Who do you trust more to protect your privacy — government or private corporations?" a full 88% picked the third option, "neither."

Why Privacy Matters

Seth Godin, entrepreneur and orator extraordinaire, introduced the concept of permission marketing. He describes a spectrum of marketing, ranging from spam (uninvited commercial interruptions) on the bad end to what he calls "intravenous" marketing (initiatives that depend on trust relationships and thus are able to deliver any substance at any price at any time) on the good end. The only way organizations can move away from spam and toward intravenous marketing is to earn consumers' permission to collect personal information. They do this by showing that collecting the information will help them better serve the customer.

This is the sort of big, stock-price-goosing thing that a focus on privacy can produce.

Now go find out where your CPO is hiding and do something about it. ▸

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READERS' LETTERS

Many Cobol Coders Are Still Going Strong

IT'S HYSTERICALLY funny that "45% of the respondents whose organizations use Cobol said their ability to hire Cobol programmers was either 'worse' or 'much worse' than their ability to hire programmers for modern languages such as Visual Basic, C++ and Java" ["Cobol Coders: Going, Going, Gone?" Technology, Oct. 9]. The reason it's funny is that computer scientists were saying that Cobol was dead back in the 1980s and 1990s. (Personally, I'm an MIS person and never believed it, since I know how much Cobol permeates the business world.) College administrators and corporate management believed them. So colleges dropped it from their curricula, and corporate managers told people with Cobol skills that their "skills needed updating" and didn't hire them. I am now a part-time teacher at a community college and have another job that has nothing to do with programming.

In the late 1990s, when I was at another college, I convinced a faculty committee to retain Cobol, but the college's management overruled it. When my current college's computer science/IT program underwent a curriculum review a few years back, I wrote a memo trying to keep Cobol in. It technically is still there, but it's never offered. (I teach Visual Basic and other computer courses – not Cobol anymore.)

Virginia C. Wilch
Adjunct assistant professor, Suffolk County Community College, Selden and Brentwood, N.Y.

MY THANKS to *Computerworld* for reporting on the continued use of the mainframe and Cobol. There are many Cobol programmer/analysts who have learned new technologies while continuing to support the mainframe "workhorse" applications. Some of us would be interested in helping companies continue to use their Cobol applications, but we do not want to relocate.

If these companies would work with us to support their Cobol applications via telecommuting, with perhaps a monthly trip to their location, they will find willing developers to hire. We are out here and available.

Betty Sims
Systems analyst, Richmond, Va.

THE ARTICLE says that "a large percentage of [Cobol programmers] are nearing retirement age." However, the actual figures cited show a very small percentage of coders in the over-age-55 category. The current retirement age in the U.S. is 67, at least if you want full Social Security benefits. This suggests there's a good 12 years or more left for the vast majority of Cobol coders. Fears that the supply of coders will dry up are as exaggerated as rumors of the death of Cobol itself.

Douglas Kretzmann
Denver

WE WILL never run short of Cobol programmers. But we don't depend on schools to train them. We can do that in 30 days. All we need are candidates with good logic ability and a true interest in helping businesses accomplish their goals.

Dean Christensen
IT director, NRECA,
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Cobol Applications Can Look Good

I WAS INTERESTED to read in the article "Cobol: Not Dead Yet" [Technology, Oct. 9] that "while it's well suited to batch operations, the language isn't as good a fit for developing interactive applications or Web-based front ends."

DDS manufactures software for the auto/truck/agriculture dealer industry, and we still actively code in Cobol. When faced with giving our product a face-lift, we used Acucorp's new version of Acuthin, which allows us to generate a "Windows"-looking screen while maintaining solid business logic. The results are a terrific-looking dealership management system that we were able to get to market in approximately two years, with all the features we offered in the past and more. I know of many companies that, after hundreds of thousands of dollars and many years invested, have scrapped their attempts to migrate their code to another platform.

Colleen Callahan
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Dubuque Data Services,
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Editor's Admissions Inspire Respect

I'VE KNOWN about editor in chief Don Tennant's editorial and personal integrity since long before he wrote his "Dear John" editorial and the plagiarism confession "Editorial Integrity" [Editorial, Oct. 9]. I wasn't surprised by either one. As a longtime reader, that's the kind of integrity I've come to expect, issue after issue.

Tennant and Frank Hayes have often looked bad or had egg on their faces because of their truthfulness. But that's what makes them look *good*. *Computerworld*'s readers aren't stupid. Tennant has always held himself to a higher standard, higher than we would expect.

Many times, I have thought to myself, He didn't have to write that – who would have known? The answer is that he would have known, and that is why *Computerworld* is Magazine of the Year – because of consistent honesty that we have come to expect. That's why we come.

Jack Miller
Director of IT, Wickliffe, Ohio

No to Data Mashups

USERS AREN'T likely to want to put their data in something called a "mashup" ["Small Office 2.0 Vendors Ally to Fight Microsoft, Google Threats," *Computerworld.com*, Oct. 12]. It's like naming a car model the Lemon.

Geoffrey J. Rarick
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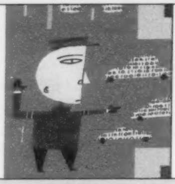
COMPUTERWORLD welcomes comments from its readers. Letters will be edited for brevity and clarity. They should be addressed to Jamie Eckle, letters editor, Computerworld, PO Box 9171, 1 Speen Street, Framingham, Mass. 01701. Fax: (508) 879-4843. E-mail: letters@computerworld.com. Include an address and phone number for immediate verification.

Avoiding Data Migration Delays

An IT veteran offers six ways to approach data migration so it won't cause embarrassing project delays. Hint: Avoid data synchronization. **PAGE 24**



SECURITY MANAGER'S JOURNAL

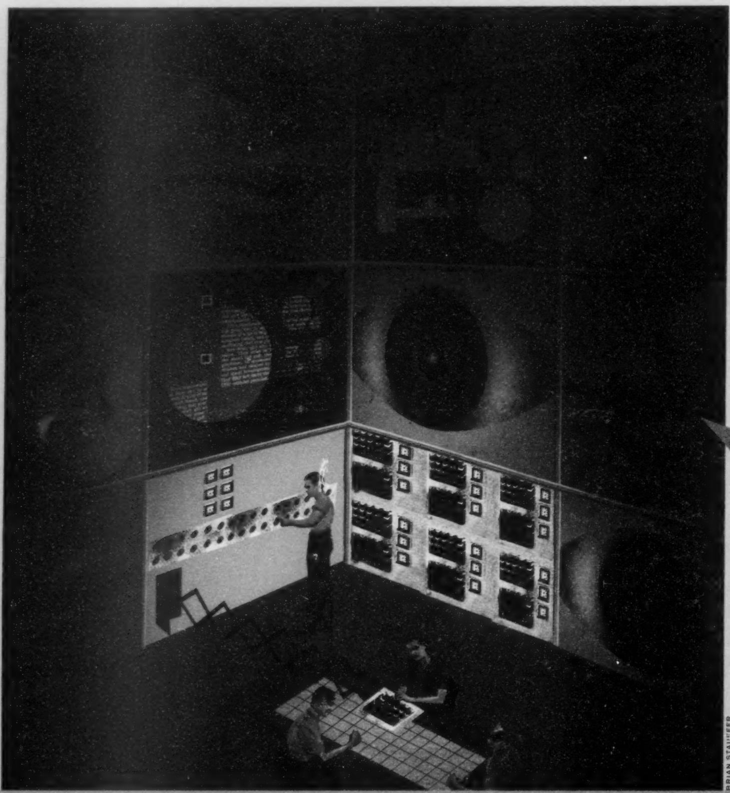
Putting the Brakes On Net Integration

After looking at an acquisition target's network, Mathias Thurman figures that he'll have to essentially start from scratch to protect the corporate network. **PAGE 26**

OPINION

Microsoft's Sock in the Vacuum

Robert L. Mitchell says the new user interface and file format that comes with Microsoft's Office 2007 will cause some problems — just like the wayward sock that ruined his new vacuum cleaner. **PAGE 28**



BRIAN STAUFFER

If These Walls Could Talk

FUTURE WATCH

They may do that and more if the promise of smart spaces is ever realized. The technology is available, but cost and other factors remain obstacles.

By Gary Anthes

Technopundits have predicted the arrival of "smart spaces" for years. Your car sends a message to a robot in your kitchen, so it can have your martini ready when you arrive home in the evening. A software agent on your LAN knows not to interrupt you with a phone call — unless it's from your boss — because you're working on a presentation for a meeting later that day.

A computer in your grocery store recognizes you and prints out a suggested shopping list based on your past purchasing patterns.

It's fun to think about these scenarios, but we rarely encounter them in the real world. Who besides Bill Gates lives in an environment in which IT senses and responds to the behavior of the people in it? Your PC knows you haven't touched it for 30 minutes, so it turns on the screensaver. That's about it.

Yet the technology to make our environments smarter and more responsive to our needs largely exists. Sensors of all types, actuators, radio frequency identification (RFID) tags, large touch-screen displays, digital cameras, personal software agents, machine-learning algorithms, voice- and image-recognition software, even robots — these aren't just the dreams of science fiction writers anymore.

The impediments to the widespread deployment of

Continued on page 22

IBM

_INFRASTRUCTURE LOG

_DAY 35: Whoa! Came in today and found a black hole. Information goes in but doesn't come out. This is bad.

_DAY 36: The black hole just sucked in three interns. HR is not pleased.

_DAY 38: I've taken back control with IBM Information Management middleware. It's built on open standards. Totally scalable. Seamlessly unites all our critical information, whatever its source. Now our info has real business value that can help spur growth.

_We got everything back from the black hole. Except the interns.

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Continued from page 20

smart spaces lie elsewhere — in the form of problems related to cost, interoperability, accuracy and reliability. And there are the social and cultural challenges. Just how much do you want systems to know about you? And how willing are you to have them make decisions for you, no matter how helpful they might seem?

Still, progress is being made. For example, researchers at Stanford University have invented a collaboration space called the iRoom, or "interactive room." A prototype includes several whiteboard-size touch-sensitive displays along the walls, a 6-foot custom-built display with pen input, an interactive display that doubles as conference room table, and a variety of cameras, microphones and wireless interaction devices.

Teams meeting in the iRoom can move information seamlessly among the devices and applications and to and from devices they bring into the room with them, such as laptops and handhelds. Any user can control any device on a wireless LAN that connects everything.

> **"We need something that knows what normal is and, if it's widely outside the norm, raises an alarm.**
>
> STEFAN HILD, SENIOR MANAGER FOR RESPONSIVE ENTERPRISE SOLUTIONS, IBM RESEARCH.

To make it all work, researchers created what they call the Interactive Room Operating System, or IROS, a metaoperating system for tying together disparate devices. "We have taken the operating system idea to the space level, so people can coordinate their work in an environment with multiple devices," says Terry Winograd, a computer science professor at Stanford.

Winograd and his students are now moving on to specific applications. For example, they are trying out the interactive table on people with Asperger's syndrome, a type of autism. Such people often are whizzes at using computers but poor at working with other people; the hope is that the table might help them improve their social skills.

Winograd says a key impediment to users' acceptance of rich, multimedia spaces is "disfluency," something IROS was designed to minimize by making the technology as seamless and transparent as possible.

"Whenever you have to stop focusing on what you care about to focus on how the machine is doing it, you lose fluency," Winograd says. "In every design of interaction, that's a concern you want to bring to it."

Building an E-office

Several years ago, IBM teamed up with Steelcase Inc. in Grand Rapids, Mich., to develop BlueSpace, a prototype office that integrates sensors, actuators, displays and wireless networks into an office space. Guided by user commands via touch screens, these gadgets can dynamically optimize heating, ventilation and lighting, and control interruptions depending on the perceived behavior of the occupant.

The prototype room even has a "steerable" projector that can project images onto any surface in the office. Aided by a sensor in his desk chair and other detectors, the occupant's incoming e-mail is sent by the projector to the surface most likely to be visible to him at a given moment.

The IBM/Steelcase prototype is intended to prove the viability and value of the concept, says Stefan Hild, senior manager for responsive enterprise solutions at IBM Research. The prototype serves those two purposes, he says, but because it requires specialized hardware and furniture and a high level of integration, the system is not practical for most companies.

"The investment of taking an office building and enabling it that way is fairly high," Hild says. "But you can get 80% of the benefit with 20% of the cost." A follow-up project at IBM called mySpace aims to give office workers greater control over their work spaces, mostly using technology already in many office buildings.

"So if you have a wireless LAN in your office, it implicitly also gives you a location system because you can get the 802.11 endpoints, such as your [laptops], so I get the location of my co-workers," Hild says. "And you may know voice over IP as a telephone system, but VoIP in your office building also gives you a level of presence information. And if it's integrated with my calendar, you can use the system to figure out when I'm available."

But widespread deployment of smart spaces faces two tough challenges, Hild says. First, such projects tend to incorporate scores, if not hundreds or thousands, of devices, each capable of generating torrents of data. Scaling up networks, central processors and storage systems to handle that is an obvious challenge, he says.

Grounded

You enter an airport terminal and your airline's computer detects your presence because your cell phone is location-aware. And since you're carrying the airline's RFID-enabled frequent-flier card, you are checked in electronically and issued an electronic boarding pass. The system sets a flag at passport control so that when you approach, your passport image is electronically displayed. You board the plane without ever touching a piece of paper or a screen.

An airport circa 2010? No, Swissair had just such a system in operation at the Zurich airport 10 years ago. Then came 9/11 and a downturn in air travel. Swissair went out of business.

But there were other obstacles to wide deployment of smart air terminals, says IBM, which built the system. "It was limited to one airport and one terminal for a single operator, and getting it deployed in other settings was difficult from a coordination point of view," says Stefan Hild, a researcher at IBM. Airlines were forced to cut costs after 9/11, he says, and there was "no appetite" for that kind of system.

– GARY ANTHES

"But a much deeper issue," Hild says, "and one that will be with us for many years to come, is that our IT systems today are optimized to process data extremely reliably but not necessarily very fast." In contrast, smart environments generally must process sensor input in milliseconds. A collision-avoidance system in an airplane must react immediately. A package bearing an RFID tag moving across a receiving dock must tell a worker within a second or so where to put it, not five minutes later.

"Marrying this real-time world with the transactional world is the real challenge we are facing," Hild says.

The Dark Side

Hild echoes the concerns of many researchers about the reliability of increasingly complex, distributed and heterogeneous systems. "One of my worries is we are not building circuit breakers into integrated business processes," he says. "What will happen eventually is that a faulty sensor reading somewhere will have a ripple effect through the network and cause untold damage somewhere else. We need something that knows what normal is and, if it's widely outside the norm, raises an alarm."

"Reliability is a major, major issue that's not being recognized at this point," agrees Leonard Kleinrock, a computer science professor at the University of California, Los Angeles, and one of several engineers credited with creating the Internet. "The complexity is essentially out of hand. We used to think that the systems we built we could understand, but that's no longer the case."

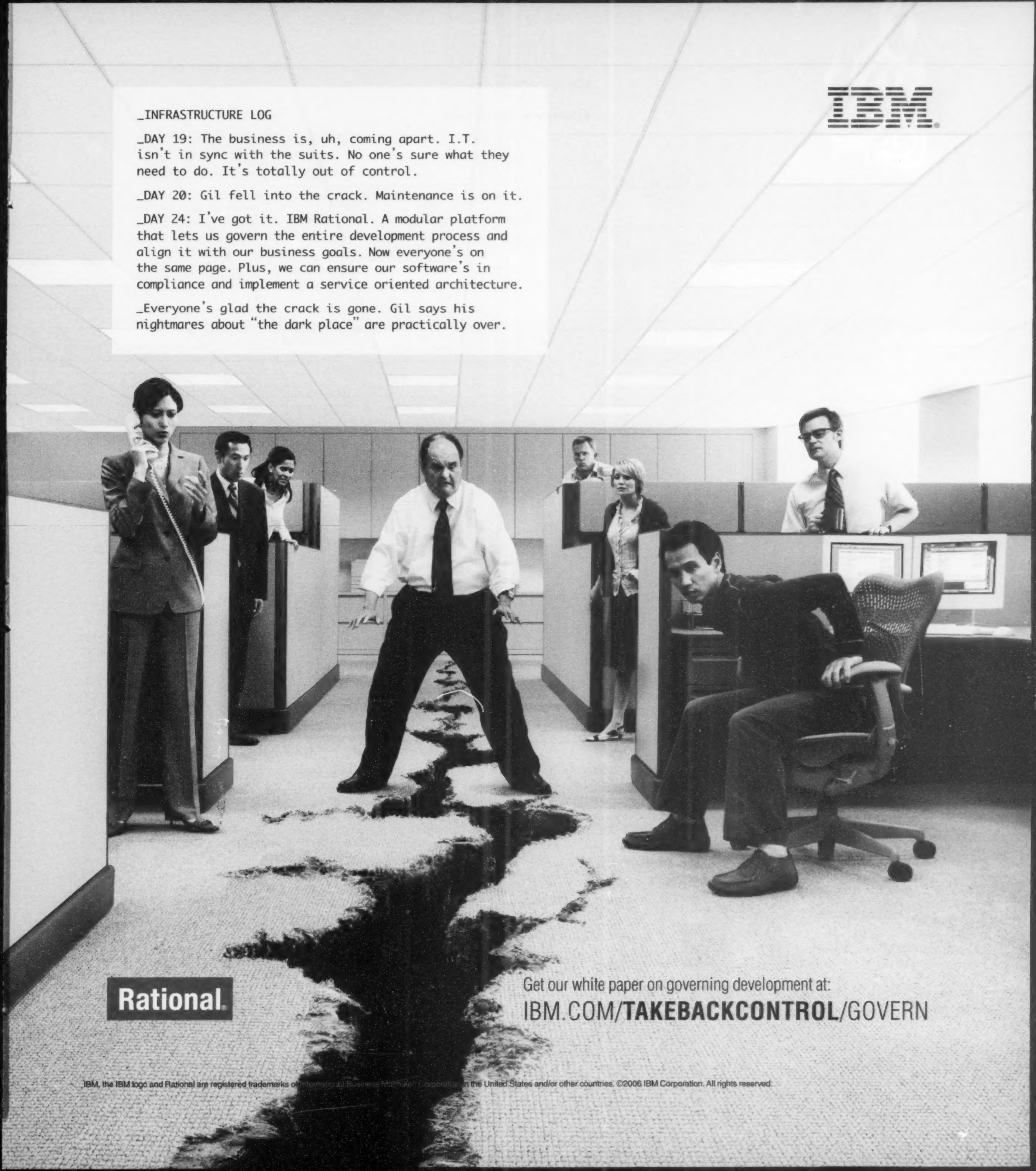
And things will get even more complex as we move to smart homes, offices, factories, stores and automobiles, Kleinrock says. "We are deploying on the order of 1 billion microcontrollers a year, in the car, in refrigerators and so on. But they haven't yet fully engaged the end user, and they are not networked. But I see that coming. It's going to surprise people when they begin to interact with these devices."

Scott Hudson's studies of human behavior are aimed at making smart environments more acceptable to their occupants. Hudson, a professor of human-computer interaction at Carnegie Mellon University, says people have traditionally thought that the interruptibility of an office worker depends primarily on two things: how deeply the worker is engaged in an important task, and whether the worker is socially engaged with another person, as in a phone call.

"But it turns out in our studies that it's much more about social engagement," Hudson says. He says his experiments with voice detectors in workers' offices show that a system can predict the workers' willingness to be interrupted at any given moment with 85% accuracy.

Asked about machine learning and statistical models that might eventually tune smart offices to the habits of each unique occupant, Hudson says he has been surprised by how well certain techniques work across groups. "But in the end," he says, "I think we'll want to go to individual models for that extra 5% or 10% of accuracy."

But isn't 90% good enough? "Well, you can say it's pretty good, or you can say no, it's wrong one time in 10," says Hudson. Many users find that kind of experience frustrating and unacceptable, he says. ▸



_INFRASTRUCTURE LOG

_DAY 19: The business is, uh, coming apart. I.T. isn't in sync with the suits. No one's sure what they need to do. It's totally out of control.

_DAY 20: Gil fell into the crack. Maintenance is on it.

_DAY 24: I've got it. IBM Rational. A modular platform that lets us govern the entire development process and align it with our business goals. Now everyone's on the same page. Plus, we can ensure our software's in compliance and implement a service oriented architecture.

_Everyone's glad the crack is gone. Gil says his nightmares about "the dark place" are practically over.

Get our white paper on governing development at:

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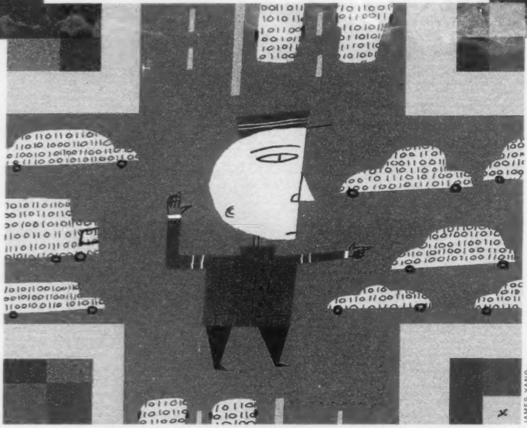
JAMES YANG

AVOIDING DATA MIGRATION DELAYS

How to handle data conversion so it won't wreck your project. By Michael Strange

As a technical matter, migrating data from an old computer system to a new one should be straightforward. There are common industry practices that can help, such as running field-mapping and conversion scripts, and using extract, transform and load tools. So why does data migration so often turn good IT projects into bad ones, with embarrassing delays that drag on for weeks or months?

In my experience, the delays are often the result of getting off on the wrong foot — failing to adequately plan the approach to data migration at the outset. The technical issues can be complex, but at least they're predictable. It's the nontechnical strategy that often causes delays down the road.

The goal of data migration (or conversion) is to move data from one system to the data fields in a new system with as much accuracy and completeness as possible. Here are six ways IT managers can accomplish this very complex work with less stress and fewer delays.

1 AVOID DATA SYNCHRONIZATION. Companies often run the existing system and the newly developed replacement system in parallel while they test to see if data conversion is working properly. There's a natural temptation to write data synchronization routines, which run nightly, to keep the two systems' data in sync.

The problem is that you may be writing hundreds or thousands of lines of code to create those routines, which become essentially a third system with its own set of bugs to fix. In extreme cases, maintaining these data synchronization routines takes on a life of its own, with so much time spent fixing synchronization bugs that little or no effort goes toward finishing the new system.

Synchronization almost always causes delays. It adds too many layers of complexity for you to maintain your sanity and your project schedule.

2 DON'T SHY AWAY FROM DOUBLE ENTRY. If your new system requires validation of data that's manually entered, such as customer orders, you should really push for double entry. Try to get users to enter data twice, in the old system and the new system, and then reconcile any differences. This will be unpopular, but you won't need data synchronization routines, which (as we've seen) cause delays.

There are side benefits to this approach, such as uncovering more of those troublesome exceptions and anomalies that pop up in the real world of data entry. Users will get more practical training on the new system, and they can provide more constructive feedback on the user interface. Plus, you'll have an incentive to finish testing quickly so you can end the pain of double entry as soon as possible.

3 DETERMINE THE "SYSTEM OF RECORD." Many data conversion projects start by asking, "What data is stored?" and "How much of it must be converted?" These are good questions, but an even more fundamental question is, "Where is the system of record?" The system of record is the definitive source of a particular data element, such as an account number or customer address.

Rules of Thumb

FOR SMOOTHER DATA MIGRATIONS:

- **Know the system of record.** Take every opportunity to consolidate data rather than create multiple versions.
- **Avoid writing data synchronization utilities.** They add too much complexity to the project.
- **Push for double entry of data during testing.** It's painful, but it has many benefits.
- **Consider testing with a full load of production data** rather than fake data.
- **Define "done."** If you don't know what "done" means, you'll never reach it.

If your new application is going to be the system of record, you'll need to pay extra attention to data quality, which will require more testing and verification time. Incorporate this extra time into your schedule so it isn't a big, late surprise. And remember that the system of record may vary for different portions of your data model, which can make the situation even more complex.

If the new system isn't the system of record for a particular data element, then data integration — perhaps using Web services — may be a better way to go than data conversion.

4 GET AGREEMENT ABOUT WHAT "DONE" MEANS. With large-scale data conversion, you usually don't achieve 100% data perfection. So hammer out an agreement on the definitions of *complete* and *verifiable*. Are you going to spot-check selected records? Are there variance reports or comparison reports that can help? What percentage of the data will be checked?

Some project teams set a deadline for this activity, allowing a certain amount of time to verify the data and correct any issues that arise. But it's better to define a preset number of tests, their frequency and the expected results.

Avoid the situation where your CIO asks, "Have you checked all the data? Is it perfect?" This isn't the time to explain that absolute guarantees aren't possible — that should have been made clear at the beginning.

5 CONSIDER STAGING HISTORICAL DATA EARLY. Before testing begins, most project teams prepare a staging environment to isolate testing activities and then populate the database with fake testing data or a subset of production data.

But instead of faking it, a better approach may be to prepopulate the new system with a full set of real production data. True, users will have to be more careful with this data than they would be with fake data, but the advantage is that you'll be testing your data-migration scripts on something that mimics the production system, in all its glory and problems. One side benefit is that you'll get an excellent understanding of response times under a full data load. Even better, you may eliminate the need for a complicated and nerve-racking last-minute conversion.

6 CAREFULLY PLAN THE LAST-MINUTE DATA CONVERSION. If your system project includes extensive last-minute conversion, you'll likely be working a weekend to do the final cutover. To avoid nasty surprises, remember that the sequence in which you do the data conversion matters because of dependencies inherent in the data model. You can't successfully pour data into fields that have built-in constraints that will reject the data. For example, if the new database requires a customer account number before adding an address, the customer account list must be migrated first — or you'll need to temporarily relax those constraints so you can proceed. To uncover these dependencies, test the loading sequence ahead of time.

Then, during the weekend conversion, pause after each loading step to verify that it really worked. You don't want to get seven steps into the process only to find out the first one failed.

Consider these issues before you start data migration, and you'll identify the hidden issues that can cause unexpected delays. And maybe you'll actually finish the weekend conversion before midnight on Sunday. ▸

Strange was until recently senior vice president of IT at William O'Neil + Co. in Los Angeles. Contact him at mstrange1234@yahoo.com.

Got Questions About Application Performance?

Computerworld's IT Executive Summit Has the Answers

December 5, 2006 • Irvine, California

Irvine Marriott
8:00am to Noon

Today's businesses are challenged in delivering high perfomance applications. Whether it's system complexity, overcoming the barriers to enabling rapid change and collaboration, or discovering problems too late to effectively fix them, the hurdles are daunting for those leading today's application deployment.

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Ahead of the Curve: Optimizing Application and Business Performance

8:00am to 8:30am **Registration and Networking Breakfast**

8:30am to 8:40am

Introduction and Overview
Ron Milton, Executive Vice President, Computerworld

8:40am to 9:20am

Market Overview and Trends
Michael Hugos, Former CIO and Author of *Essentials of Supply Chain Management* and *Building the Real Time Enterprise: An Executive Briefing*

9:20am to 10:00am

Application Performance at Broadcom Corporation: An End-User Case Study
Ken Venner, Senior Vice President and Chief Information Officer, Broadcom Corporation

10:00am to 10:15am **Refreshment and Networking Break**

10:15am to 10:50am **Application Performance Assurance Case Studies: It Pays to be Predictable**
Andrew Hittle, Vice President, Quality Assurance Solutions, Compuware

10:50am to 11:25am **Application Performance: An End-User Case Study**
Kenneth Speller, Director of Quality Assurance, Chicago Board of Trade

11:25am to Noon **Panel Discussion**
Moderator: Ron Milton, Executive Vice President, Computerworld
Panelists: Michael Hugos, Former CIO and Author of *Essentials of Supply Chain Management* and *Building the Real Time Enterprise: An Executive Briefing*; Andrew Hittle, Vice President, Quality Assurance Solutions, Compuware; Ken Venner, Senior Vice President and Chief Information Officer, Broadcom Corporation; Kenneth Speller, Director of Quality Assurance, Chicago Board of Trade

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Putting the Brakes On Net Integration

Assessment of acquisition target's network tells our security manager he'll almost have to start from scratch. By Mathias Thurman

SECURITY MANAGER'S JOURNAL

MY COMPANY is moving ahead with an acquisition I mentioned back in August, and last week I completed my initial assessment of the security issues that will arise in integrating the two networks. Brace yourself — it's not pretty.

I visited our acquisition target's main offices in Connecticut and New Mexico. I brought along a contractor to conduct much of the assessment work while I met with the management team to learn about the company's business processes, intellectual property issues, policies and so on.

We could just install Multiprotocol Label Switching (MPLS) to connect these offices and their 600 employees to my company's network, but that would essentially grant them access to a majority of our internal infrastructure. As the security manager, I can't allow that until I can vouch for the integrity of the acquired company's network and the efficacy of its policies. Most likely, we will want to bring the new company's policies in line with ours, since this year we suffered only one major virus outbreak, the result of an employee connecting a personal laptop to our domain.

In assessing the issues we faced, I focused on several key areas. The first was malicious code. I need to ensure that we don't introduce anything like viruses, spyware or Trojan horses into our network. To determine if this company has any malicious code running free, I had the consultant conduct some scans. Right off, he found indications of spyware — network traffic symptomatic of desktops "calling home" to transmit keystroke capture files or other collected data. Nessus, a freely available port scanner, detected indications of malicious code listening in on nonstandard ports.

Next, we focused on questionable external connections. We had to make sure that this company didn't allow third-party access to its network and that the firewall, routers, VPN and wireless access points wouldn't allow unauthorized access. This time, we ran into a couple of problems. One was the configuration of wireless APs. The company was using WEP with a shared key, but it hadn't changed the key in years, and the AP terminated on the internal network.

My company's standard is to use WPA with the Temporal Key Integrity Protocol, and we terminate the access points on a virtual LAN so that the only device that can be reached is a VPN gateway. This forces all employees to use a VPN to get into our network from the access point. I'm not touting this as the most secure means of providing wireless access, but it's a lot more secure than a shared WEP key that hasn't been changed in years.

> I can't allow integration until I can vouch for the integrity of the acquired company's network.

The other problem was a firewall rule that allowed access to the company's internal network from a very large network range completely outside the company's registered network addresses. No one seemed to know what it was about. Some Internet searches revealed that the address range belonged to a third-party network integration company, one that I learned was hired for a 30-day contract more than two years ago. This was not good.

Next up was unacceptable use. I impose strict controls to block many of the common peer-to-peer software technologies, and we filter Web traffic at our caching servers to prevent employees from browsing Web sites that we deem to be unacceptable, such as porn or gambling sites. This time, scan data showed that many employees are using peer-to-peer software. And the company doesn't block outbound Web access, so employees are free to visit any Web site at all. My company's view is that unfettered access can lead to various legal, human resource and productivity problems.

More Problems

Areas of concern were mounting, and we still hadn't looked into issues that might arise from the company's critical devices: domain controllers, source-code repositories, file servers, firewalls, VPN concentrators and so on. When we did so, it was obvious that no one had taken the time to conduct any type of configuration management or general maintenance after the servers were built. Patches were out of date. No password policy was being enforced; administrative passwords were left blank or were easily crackable. There was even a SQL payroll database that used the default password for the administrative account. The desktop and server virus-protection engines were more than three years old.

As you can guess, there's no way I'm going to allow our company to install the MPLS circuit without some serious remediation. To start with, I'm mandating that all desktops and servers receive the latest recommended patches for both operating systems and applications. The latest virus engine and pattern file will need to be installed, and all systems must be scanned and free from malicious code. Anything that can't be cleaned will need to be rebuilt.

The company will have to configure its domain to enforce a strong password policy, and all administrative and privileged account passwords will have to be changed. I'm having the critical servers checked with RootkitRevealer, a useful utility that can be downloaded from Microsoft's Web site. It essentially lists registry and file-system API discrepancies that may indicate the presence of user- or kernel-mode rootkits.

Now, I know that some systems, such as engineering, development and lab servers, will be exceptions. And of course, we won't know about all resources. So I will also be mandating the installation of two intrusion-protection devices. One will sit between the two companies (on the MPLS circuit), and the other will be between the acquired company and its Internet circuit.

I'm hoping that with this plan, plus some additional policy enforcement, I'll be able to limit any illicit activity from reaching my company's network. I'll keep you posted. ▸

WHAT DO YOU THINK?

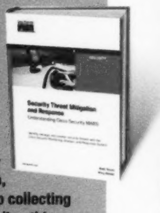
This week's journal is written by a real security manager, "Mathias Thurman," whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com, or join the discussions in our security blogs: **computerworld.com/blogs/security**

To find a complete archive of our Security Manager's Journals, go online to **computerworld.com/secjournal**

SECURITY LOG

Security Bookshelf

Security Threat Mitigation and Response: Understanding Cisco Security MARS, by Dale Tesch and Greg Abelar (Cisco Press, 2006).



My predecessor purchased a Cisco MARS (Monitoring, Analysis and Response System) appliance, and it ended up collecting dust. After reading this book, I'm going to wipe the dust off. It's amazing how many different devices can be pointed to the MARS box. The authors spend a full chapter describing the various configuration options and then guide the reader through tuning the reporting capabilities. A must-have book for anyone interested in event correlation, especially if your focus is Cisco.

– MATHIAS THURMAN

SANS List Includes The Human Factor

For the first time, the SANS Institute's ranking of the top 20 Internet-based attack vectors this year includes "human vulnerabilities." Typically, the list consists of software products, but Alan Paller, SANS's director of research, said the human factor is being exploited in a growing number of attacks.

IRS Lost Hundreds Of Laptops, Data

Documents obtained under the Freedom of Information Act by WTOP radio in Washington indicate that between 2002 and 2006, 478 laptop computers were lost or stolen from the Internal Revenue Service. Of those, 112 held sensitive taxpayer data. In a statement, the IRS said that in January, it plans to begin encrypting all data on laptops.

The *Science* of CERTAINTY

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BRIEFS

Cape Clear Adds BAM to Data Bus

■ Cape Clear Software Inc. this month rolled out business activity monitoring software designed to give companies a real-time view of the performance of their business processes. Called Cape Clear BAM, the product works with the Waltham, Mass.-based vendor's enterprise service bus to take data feeds from the ESB and provide that information to users in dashboards that can show inventory problems, shipment delays or other performance issues, the company says. The software is available now as part of Cape Clear's ESB, which sells for $75,000 and up.

Fujitsu Unveils Ethernet Switch

■ Fujitsu Computer Products of America Inc. recently announced the XG2000 series of Ethernet switches, which offer throughput of 10Gbit/sec. The 1U (1.75-in.-high) rack-mounted switches come in a 20-port optical version and a version with 16 ports of copper and four of fiber (Model XG2000C). The XG2000 succeeds Fujitsu's XG1200 series. The list price of the XG2000, available in December, is $18,000. The XG2000C will ship in the first quarter of 2007.

Savvion Upgrades BPM Features

■ Savvion Inc. this month brought out a new version of its business process management suite, Savvion Business Manager 7.0. It includes a new abstract modeling feature to help business users design new processes, and a Process Concierge function that offers user support via instant messaging and discussion forums, the Santa Clara, Calif.-based vendor said. Another new feature is forensic auditing, which enables users to see the history of process changes to ensure compliance with Sarbanes-Oxley Act rules. Pricing for Savvion Business Manager 7.0, which will be available Dec. 15, starts at $100,000.

ROBERT L. MITCHELL

Microsoft's Sock in The Vacuum

SHORTLY after my daughter was born, my wife and I decided to turn in our old canister vacuum for a spiffy new upright model. But the manufacturer's inattention to one small detail ruined the whole experience. Just seconds after I unpacked and turned the thing on, it sucked up a baby sock hiding under my daughter's dresser.

ROBERT L. MITCHELL is a *Computerworld* national correspondent. Contact him at **robert_mitchell@computerworld.com**.

The overlooked detail was this: Unlike our canister vacuum, the upright model's motor was in front of the debris bag rather than behind it. The sock hit the impeller on the motor and promptly jammed. Before I could step on the power button, the motor went up in smoke. A week later, we were using our familiar old canister vac again.

For the soon-to-be-launched Microsoft Office 2007, the sock in the vacuum is the new user interface. Users who are comfortable with the old Office interface may get all jammed up before they even open a file. Where's the File menu? It's gone, replaced by the Office Button, a colorful, disk-shaped graphical object. Somehow, you must know to click on that button to find menus for basic functions such as opening or saving a file.

The familiar File, Edit, View, Insert menu system has been replaced by a context-sensitive Ribbon bar. Many functions have been moved around and regrouped in ways that may seem illogical or confusing to experienced users.

After the initial shock wears off, Office 2007 users will find much to like about the suite. The challenge will be getting people over that initial hump — and keeping them from blowing a fuse during the transition.

Jensen Harris, principal lead program manager for Office 2007, says IT should expect a "temporary loss of productivity" as users come up to speed. He expects "recovery" in one to three weeks. Organizations that plan to move forward with Office 2007 will need to sell users on the benefits and roll this version out with plenty of training and support resources to avoid end-user frustration.

Computerworld recently surveyed 171 Office 2007 beta testers and found that most of them like the product and 72% said they have upgrade plans. But the other 28% expressed strong negative feelings about the user interface.

The strongest reactions came from advanced users who are heavily invested in the existing user interface. Diane Pencil, lead enterprise architect at Owens Corning, says there's something soothing about clicking down through the menus to find those familiar functions. "That's what these new processes mess with," she says.

By the way, if Eureka had installed a simple, 10-cent circuit breaker button on my upright vacuum, I might still be using it today. Likewise, it would be nice if Office 2007 had a little red button that allowed you to fall back to "classic" menus.

Then again, because the new user interface is a key benefit, enabling classic menus would defeat the purpose of upgrading; it would also make new features unavailable.

If training isn't enough of a challenge, there's another sock in the vacuum: the Open XML file format that debuts in Office 2007. Although Open XML has clear benefits, IT administrators who went through the Office 97 transition may recoil in horror at another format that's not backward-compatible, despite the fact that Microsoft has introduced tools it says will make the transition go more smoothly.

Microsoft wants everyone to immediately download a new compatibility pack that will enable Office 2003, XP and 2000 users to read .docx and other Open XML file formats. But getting everyone to swallow that 26.6MB compatibility pack won't be easy. Not only will your company need to make the transition, but your business partners will as well.

Even if everyone does download the compatibility packs, things can still get lost in the translation. In some cases, new features will be eliminated or dumbed down.

For example, document objects such as the new Smart Art get calcified into bit maps when viewed in Office 2003 or earlier in compatibility mode (but are "rehydrated" into Smart Art again when the Office 2007 user opens them).

Fortunately, Microsoft did install a circuit breaker for Open XML: You can set a group policy to have all Office 2007 users default to saving in the traditional, binary format. Although that means some features will be unavailable, IT should push that button — at least initially. Forgoing Open XML may not be optimal in the long run. In the short run, however, getting users to swallow the new interface will be much more important. ◆

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Got Questions About Wireless Security?

Computerworld's IT Executive Summit Has the Answers

December 7, 2006 • San Francisco, California

JW Marriott Hotel (formerly the Pan Pacific Hotel)

7:45am to Noon

The growth of wireless networks within the last few years has been explosive, and as a result, IT departments must keep up with the potential abuses of wireless technologies. There are few control mechanisms available to mitigate risk, and users continue to discover ways around available controls for wireless networks. IT departments must face unique challenges to protect the integrity, confidentiality and availability of critical business information on wireless systems.

This IT Executive Summit will explore how companies have effectively dealt with these challenges and how they've found solutions. And it will outline the questions IT needs to ask and answer to provide secure wireless networks to their enterprise infrastructure.

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Securing the Enterprise Infrastructure from Wireless Threats

7:45am to 8:15am		**Registration and Networking Breakfast**
8:15am to 8:30am		**Introduction and Overview** Ron Milton, Executive Vice President, Computerworld
8:30am to 9:15am		**Market Overview and Trends** Ken Davis, Chief Information Security Officer and Partner, The Barnier Group LLC and former CSO, Allstate Insurance
9:15am to 9:45am		**End-User Case Study: The Weather Channel** John Penrod, Chief Information Security Officer, The Weather Channel
9:45am to 10:15am		**Refreshment and Networking Break**
10:15am to 10:45am		**Industry Visionary Presentation** David J. Thomason, Director, Security Engineering, Sourcefire
10:45am to 11:15am		**End-User Case Study: TD Ameritrade** Alan Lustiger, Security Architect, TD Ameritrade
11:15am to Noon		**Discussion Panel** Moderator: Ron Milton, Executive Vice President, Computerworld Panelists: Ken Davis, Chief Information Security Officer and Partner, The Barnier Group LLC and former CSO, Allstate Insurance; John Penrod, Chief Information Security Officer, The Weather Channel; Alan Lustiger, Security Architect, TD Ameritrade; David J. Thomason, Director, Security Engineering, Sourcefire

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IT MENTOR

A Small-Project Playbook

Football coaches use playbooks to ensure accurate coordination among team members. Tom Barnett (right) says a project playbook can serve the same purpose — especially when your team is geographically dispersed. **PAGE 33**

ADVICE

Managers' Forum

How can you tell if your IT workers have a morale problem? If you have to ask, they probably do, says Paul Glen. **PAGE 34**

OPINION

IT, We Have a Problem!

When Paul Ingevaldson taught an MBA class recently, he learned that IT's image among young business people is as bad as ever. **PAGE 36**

WORK/LIFE BALANCE: What's It Worth?

It's hard to pin an ROI on the **flexible workplace,** but IT managers say it pays off.

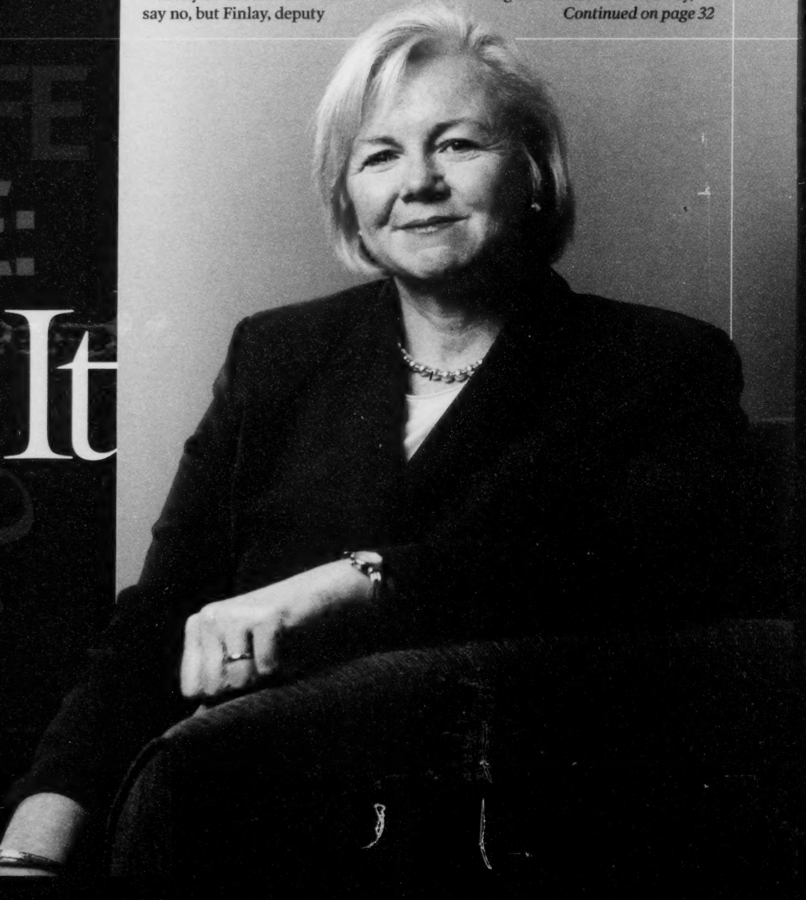
A YOUNG PROGRAMMER approached Mary Finlay with a request: After just a year on the job, he wanted to work four 10-hour days so he could have every Friday off, a schedule that would allow him to play Thursday night gigs with his rock band without worrying about the next day's work.

Many IT executives would say no, but Finlay, deputy CIO at Partners HealthCare System Inc. in Boston, OK'd the plan. "He was smart and talented, and we wanted to keep him," she explains.

Her decision paid off: He stayed with Partners for nearly a decade.

As Finlay's story shows, employees aren't the only ones who get something out of flexibility in work schedules. Companies do, too. Actual ROI figures are hard to come by,

Continued on page 32



MARY FINLAY, deputy CIO at Partners HealthCare, says that flexible work options build a workforce that's willing to go the extra mile.

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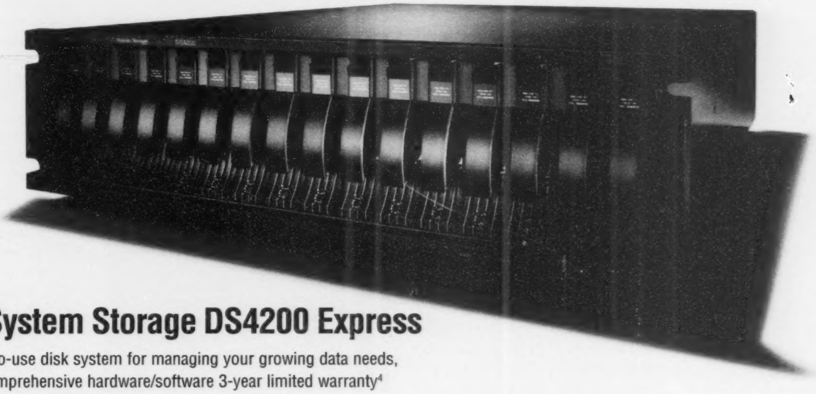

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Does It WORK In IT?

Companies that promote a healthy work/life balance generally have corporatewide policies and guidelines that allow individual employees and their managers to set up flexible work arrangements.

That doesn't mean that all IT jobs are suitable for every flexible arrangement, however, says Mary Finlay, deputy CIO at Partners HealthCare System. For example, she says, employees whose duties include fixing broken PCs and other hardware can't telecommute.

Some production-support positions can't be done part time or from home, adds senior project specialist Lisa Adragna. And some technical support positions tied to patient-care systems need to follow core business hours because of their critical nature, which means those staffers can't work nontraditional hours.

The same is true at American Century Investments. "Some people have to physically be here," says Keith Little, a network engineering adviser. He points to the computer operations group at his company as an example. "They have to be here because they're swapping out tapes or disk drives."

Some companies are more restrictive. In June, Hewlett-Packard Co. brought back into the office some IT employees who had been working from home. An HP spokesman told *Computerworld* at the time that the move was to "facilitate face-to-face interaction and increase team effectiveness."

On the other hand, some IT shops are finding that positions long presumed to be officebound can be done remotely, part time or during nontraditional hours. "Today, there's not a whole lot I can't do from home," Little says. That includes dealing with a crisis such as a network crash. In fact, fixing that kind of problem from home can be better for the company than doing it the traditional way.

Little and others in network services are equipped with laptops and have broadband access at home (an expense the company picks up). So if there's a network problem at 2 a.m., not only can they usually fix it from home, but they can also do it with significantly less downtime than would be required if they had to commute to the office.

– MARY K. PRATT

Continued from page 30

but executives can point to tangible returns, from good retention rates to more complete disaster recovery plans. They say the bottom line is this: By giving employees flexibility, a company gets a better, more committed workforce that can help keep it up and running, even during natural or man-made catastrophes. And that has a real dollar value.

Good Business

"Study after study shows that it is extremely cost-effective and very good business to provide flexibility to your employees," says Barbara Wankoff, national director of workplace solutions at KPMG LLP, an audit, tax and business advisory firm in New York. "Employee morale, employee productivity, retention, historical knowledge — all of those things improve when people feel they have more control over when, where and how they work."

Wankoff says KPMG workers can opt for flextime schedules — in which they work nontraditional hours — or a compressed workweek, putting in their 40 hours in fewer than five days. They can telecommute from home or a KPMG facility that's more convenient than their assigned office. Or they can cut back on certain duties and work fewer hours.

Like many companies, KPMG has not calculated a return on investment for these programs, but Wankoff says there's no doubt that the firm benefits. She cites Norma Jean Dembinski, an associate director in IT. Dembinski has worked at KPMG for five years and in IT for nearly 30 years, holding positions ranging from programmer to vice president of information systems.

Dembinski is a valued employee, so her boss wasn't too happy earlier this year when she heard that she was thinking of quitting. Dembinski, who works in the Montvale, N.J., office, was getting married and moving to Connecticut. She told her boss that the 64-mile one-way commute would be too taxing. Her boss asked if they could work something out.

So Dembinski now works from home three days a week and commutes to the office the other two. She says she probably would have quit if she hadn't been able to achieve that balance.

If that had happened, Wankoff says, the company would have paid for it. Based on standard human resources industry numbers, she figures that it costs 150% of an employee's salary just to find a replacement. That includes the costs of advertising the position and training the new hire, as well as the time managers spend reviewing candidates. It doesn't include the new person's salary.

There are also intangible costs associated with losing someone who has an understanding of the business that comes only with tenure, Wankoff adds.

Laurie Bienstock, a compensation analyst at business consultancy Watson Wyatt Worldwide, concurs. "The typical costs of turnover per employee — without even realizing you have lost productivity and intellectual property — can run one to two times employee salary," she says.

Improved retention and the associated savings aren't the only benefits of flexible work arrangements, says Janice Bartkowski, who supports IT as director of human resources at American Century Investments in Kansas City, Mo.

At her company, IT staffers can work condensed weeks (either 80 hours in nine days or 40 hours in four days) or nontraditional hours. They can also work part time, share jobs or telecommute.

PRICELESS

Here's what 1,311 senior executives worldwide think about work/life balance:

said they would turn down a promotion that would hurt their work/life balance.

said they would seriously consider turning down such a promotion.

said work/life balance is critical in their decisions to join or remain with an employer.

One benefit of such flexibility is expanded coverage. One IT manager who has a farm, for example, works 7 a.m to 3:30 p.m. so he still has time to tend to things at home after work. Others work later shifts.

Bartkowski says flexible arrangements also help the company plan better for disaster recovery, a hot-button issue this year because of the danger of an avian flu pandemic.

"With people telecommuting, if you have a situation at your building, you have people who can still keep working," she says. "Because of avian-flu-type issues out there, the ability to have people working from home becomes more of a business need."

Another benefit is increased productivity. Keith Little, a network engineering adviser at American Century, says he telecommutes when he has projects that need his undivided attention. "If I have a bunch of documentation to do, it's more efficient for me to stay at home than to come in where there's a constant stream of interruptions," he says.

Highly Committed

Studies confirm that companies with work/life programs, which can include on-site fitness centers, help with child care or paid time for community-based volunteer opportunities, provide an advantage, Bienstock says.

Each year, Watson Wyatt publishes a report called "The Strategic Rewards Study," which examines U.S. organizations with 1,000 employees or more. This year, it looked at top performers in 262 companies — those workers who exceeded or far exceeded managers' expectations during their most recent review periods. It found that of those who reported having work/life balance, 45% considered themselves highly committed employees. Of top performers who did not have work/life balance, none described themselves as highly committed.

Finlay can attest to that. She says work/life options create "a very satisfied, hard-working group of employees. I know, and I've had to test this multiple times. When I need people to rally, I've never had a challenge. They're ready and willing to give."

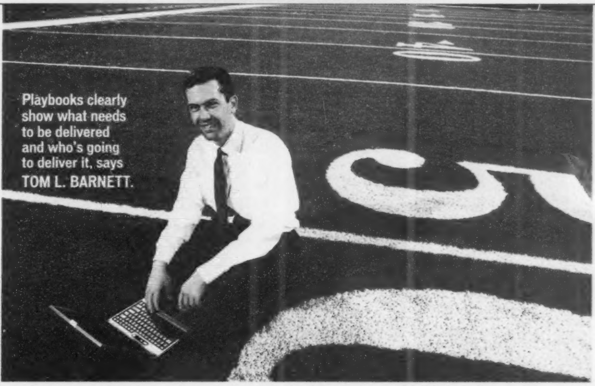
Lisa Adragna has worked at Partners HealthCare for 21 of the 22 years she has been out of college. She started as a full-time programmer and progressed through various positions and schedules as she gained experience and expanded her family.

Adragna worked part time, shared a job with another mother, went back to full time when she was promoted to corporate IT manager, and then cut back her hours to work as a part-time senior project specialist after the birth of her third child in 2000. Adragna started working full time again in 2003, although she works from home one or two days a week.

With a solid knowledge of functional groups and institutions under the corporate umbrella and lots of experience with the older systems at the various hospitals, Adragna is clearly a valuable asset to Partners.

But she says she's particularly committed to being a standout employee because of the accommodations she has had over the years. "I feel like I want to prove myself even more because they've given me this flexibility," Adragna says. "I want to prove to them that this really works." ▶

Pratt is a Computerworld *contributing writer in Waltham, Mass. Contact her at marykpratt@verizon.net.*



Playbooks clearly show what needs to be delivered and who's going to deliver it, says TOM L. BARNETT.

MICHELLE ANDONIAN

A Small-Project PLAYBOOK

Here's a way to keep your far-flung IT team as focused as a football squad.

By Tom L. Barnett

WE'VE ALL HEARD plenty of project team analogies. For me, the most fascinating one compares a project to a football game. Each has an objective, a team that needs to be coordinated and a deadline.

I've devised a little tool that extends the analogy further. Football coaches have long made use of playbooks to ensure accurate communication, visual sequencing and coordination among team members spread over a large area. I've found that a playbook can serve the same purpose for a virtual team working on a small project.

My playbook is based on the classic issue log. Instead of being an incongruent list of problems, however, it's a sequential list of tasks. It clearly shows everyone the order of the work, who is being called on and when.

By their nature, virtual teams work as a collection of free agents, and conference calls among team members have a tendency to become disembodied forums of multiple conversations, divided attention spans and mayhem. Given that most of my virtual teams are located across the country or around the world, I need a more focused means of getting results. The playbook is that mechanism.

The playbook gives me, as the project manager, a way to capture tasks, actions, issues and a RAM (responsibility assignment matrix) all in one spot. It gets team members thinking, "What's the next thing I can be doing, and can I do it sooner?" or, "What am I waiting on that I should communicate to everyone on the conference call?" You could call it a pseudo critical path for dummies.

Small Projects Only

I use a playbook primarily for the small things — projects of 120 hours or less — that are too granular to require a formal project schedule. Within Microsoft Project, these are the things that typically might be scheduled as two- or three-line items, better classified as microprojects or complex to-do's. For example, within a project schedule, I would expect to see a line item for the task "build/configure Web server." Coordinating that task is something I would probably want to manage with a playbook.

IT MENTOR

My playbook has eight columns: Task Name, Description, Due Date, Owner, Issues, Deliverables, To, and Waiting On.

On the surface, it looks fairly straightforward. The real power of the playbook, though, is in defining the deliverable (output) from a task and the person or persons to whom it has to be delivered. (For example, the network team registers a server on the network. The deliverable is the network address, which the sysadmin team needs in order to access the server.)

If a team member isn't able to complete his task by the date or time required, he indicates what is holding him up in the Waiting On column (e.g., "password to the database server" or "confirmation of Web server reboot"). This lets everyone on the team know what the problem is and highlights and applies pressure on the person who needs to complete the action to get things moving again.

The biggest hurdle in virtual teams is getting geographically distributed team members to think and act as if they were all in the same room looking at the same whiteboard. The playbook is particularly good for coordinating many people, each of whom has just a task or two to do as part of the overall effort.

In a simple format, it combines the agenda for the group teleconference calls, the project plan (task list), resource matrix (role assignments) and status report. If there's an issue, it's listed right in the playbook, next to the task that triggered it.

Although the playbook isn't for large projects, it's effective for managing the small stuff for which a project schedule and other formalities are too cumbersome. It allows me to be organized and nimble in firefighting efforts.

For example, when working with the infrastructure team, the application team and an outside vendor to troubleshoot a system's availability problems, we used a playbook to sequence the steps that each team would perform and noted each step's effect on each other area. Playbooks have also led my team through software upgrades and virus outbreaks, and I have required that they be used for implementing all small to medium-size change requests.

Once you've designed a few playbooks for various types of tasks, you'll find that many are virtual templates that can be reused with minor adjustments.

Communication is the single most important factor in leading a football team or an IT team. That's why many a coach has gone to great lengths to protect his playbook. Once you've built a few of your own, you'll understand why. ◗

Barnett is a program director for a large IT services company where he focuses on IT program management for clients. Contact him at tom.barnett@earthlink.net.

Step	Task Name	Description	Due Date	Owner	Issues	Deliverables	To	Waiting On
1.0	Install/build all rack components	(1) Install racks; (2) Validate wiring compliance; (3) Install grounding bars	10-Aug-06	Tork	Server mounting rails missing in shipment.	DC floor approval, data center power-up approval	Tork	Replacements to be overnighted
2.0	Rack all servers	(1) There are six servers to rack; (2) Include rack-mounted UPS; (3) Validate infrastructure config compliance	11-Aug-06	Tork		Rack location addresses, server specs	Williams	
3.0	Build a target server	Note: We can even place a desktop in place to facilitate the network configuration.	11-Aug-06	Williams	Out of space on current switch, need another.	Server connection info	Miles	
4.0	Establish network connectivity	(1) Establish subnet; (2) IP the servers; (3) All required port and firewalls between servers opened? (4) Are ILO/RIBs active?	14-Aug-06	Miles		Connectivity info, drive partition, requirements (Barnett)	Neal	
5.0	Hardware configuration	(1) Hardware installed; (2) Initiates BIOS POST; (3) Ext devices installed; (4) Logical drives created	14-Aug-06	Neal	May not have ordered the right NICs, need to check them.		Hanorahan	
6.0	Network interface build	(1) Define IPs for DRAC or RIB; (2) Connect ports to the switch; (3) WINS and DNS	14-Aug-06	Hanorahan				

[MANAGERS' FORUM]

WITH PAUL GLEN

I hope this monthly column will provide a lively exchange of ideas with IT managers. I'll do my best to answer your questions, and some of your responses will run alongside in "Readers Talk Back."

PLEASE SEND YOUR QUESTIONS, COMMENTS AND CRITIQUES TO ME AT PGLEN@C2-CONSULTING.COM

Q How can I tell if my group has a morale problem? This is one of those things that you should just be able to sense. If you think that your people might have a morale problem, they probably do.

That said, not everyone is naturally gifted at reading other people's emotions. So here are a few ideas. You've probably got a morale problem if your people:

- Arrive at work later and leave earlier than others in the organization.
- Are disappearing at unusual hours of the day for "personal business," wearing unusually nice clothing.
- Rarely ask you questions.
- Don't make suggestions.
- Are afraid of you.
- Don't trust you.
- Think you're a hypocrite.
- Don't feel challenged by their work.
- Feel trapped in their current jobs.
- Have no sense of where the organization is going.
- Don't understand how to make progress in their careers.
- Don't feel that you appreciate their efforts.
- Think that you won't be pleased no matter how hard they work.
- Are afraid of layoffs.
- Are afraid of outsourcing.
- Are afraid that the organization may fail and that they will be out of a job.

Morale also may be low if you:

- Feel that your people are constantly letting you down.
- Don't trust your people's motives and/or abilities.
- Feel that the rules you make for others don't apply to you.

But if you plan a company picnic or some other morale-building activity and nobody wants to participate, your people are probably completely normal.

Q What is the best approach to float an idea upward that you know is going to take total commitment from the senior management team to execute? I suspect that there is no one right way. But there is one key principle: Know your audience. You've got to know what sort of persuasion works best on your senior managers, collectively and individually.

The Kipnis-Schmidt Profiles of Organizational Influence Strategies describe seven ways people in organizations try to influence one another.

REASON. Getting others on board by using rational arguments. Assumptions and logic guide others to your point of view.

FRIENDLINESS. Getting others to support you because they like you rather than because they agree with your point of view. Here, your point of view becomes popular because others feel positively predisposed toward you.

COALITION. Getting others in the organization to support your point of view. The more people who support your perspective, the easier it is to get even more people to go along.

BARGAINING. Trading value and negotiating for what you want. If you give someone else what they want, they agree to give you what you want.

ASSERTIVENESS. Getting others to go along with you by the force of your demands. It doesn't matter if they agree with you or not, as long as they comply.

APPEAL TO HIGHER AUTHORITY. Getting a higher authority to support your position. Once your position is adopted by the boss, it's much easier for you to get things going or for the boss to do the influencing on your behalf.

SANCTIONS. Using rewards and punishments to get others on board. If you have the ability to impose sanctions, you can get others to comply based on the coercive power of your incentives (positive and negative).

So the question is, which of these will work best when floating an idea up to senior management?

First, we need to recognize our personal biases with respect to the strategies we choose. In general, as geeks, we like reason. Logic rules! We see other approaches as just ugly politics.

Unfortunately, this attitude often doesn't serve us well. If you really believe that something is a great idea for the organization and you need to get the support of senior management, it's worth considering some of the other influence strategies.

If you are going to use the reason approach (the most common), I'd suggest a two-step strategy.

First, spend some time getting the important players on the same page about the nature of the problem. Only after you've achieved that should you work on getting them to support the solution. Too often, I see managers trying to jump directly to the solution when there is no consensus on the problem. Not only does this not get you the support you need, but it often can diminish your stature in the eyes of your superiors.

Given that you are trying to float an idea upward, some of these strategies will probably prove less effective than others. Consider friendliness, coalition-building and bargaining as your primary political avenues.

While this may seem crass, it's how things get done. Politics need not be ugly. I define organizational politics as the process of a group making decisions. That's it.

You can use these tools for good or ill. I'd suggest that learning to use the nonreason approaches effectively can position you to be a significant force for good in the organization. ▸

READERS TALK BACK

More on Getting IT Recognized as 'Operations'

There are two things that did not make it to your remedy list, and those are relationships and business focus. In my career as a CIO, those two things have been key. Neither came easily to me as a "geek," but focusing on them led to a couple of positive things. First, at my last CIO job, I was given a seat on the executive committee. (A number of "operational officers" were not on that committee.) Next, I emphasized to my IT staff that they were business men and women first, with specific skills that helped support the enterprise. Those who took that to heart experienced a great deal of respect and were brought into a number of broader company initiatives as equal participants with their "operational" peers.

Although I had no agenda in mind when I started on those two emphases, their rightness and success first came home to me a few years ago when I was making a presentation at an industry conference. I had been introduced as entering my sixth year as CIO of my company. After my presentation, there was the usual question period. The first question I was asked was how I could last six years as CIO when the industry average at the time was less than two years. I had never really thought about that, but the first thing that came to mind was the word *relationships*. That was sort of an epiphany for me.

Another proof of the value of the emphases I was making was when my company was later acquired by a larger company. All of my key people who wanted to stay were offered good positions, and most are still there. Some have advanced, and a few have even advanced into non-IT management positions. I think their focus on the business, as well as on building new relationships, was a big help in this.

So I would add to the list of remedies an emphasis on building relationships and focusing on the business as key steps for greater IT acceptance. – P.W.

I couldn't agree more with your additions to the list. Learning to develop strong relationships and business acumen will definitely help matters. – P.G.

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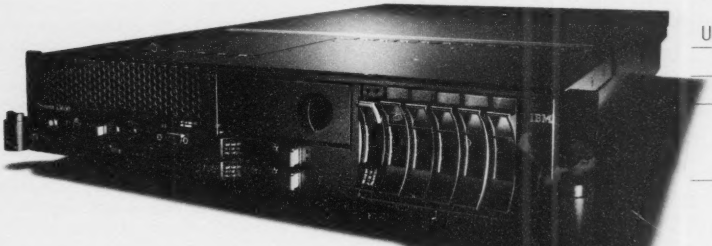

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PAUL INGEVALDSON

IT, We Have A Problem!

RECENTLY, I was asked to be a substitute instructor for two sessions of a class in the professional MBA program at a local university. The class is called "Management of Information Systems Technology" and is mandatory to receive the degree. I was really excited about the opportunity. Here was my chance to explain to business students how to interface effectively with IT. At the very least, I thought, these grad students would better understand the IT world.

In my first class, I asked the students what they thought of their IT departments. Only one of the students was an IT practitioner. What I got back from the rest were the usual stereotypes that have existed for as long as I've been in the field: IT doesn't understand the business; projects take too long; systems never do what we want them to do; projects are never completed on time; I can't understand them; yadda, yadda, yadda.

PAUL M. INGEVALDSON retired as CIO at Ace Hardware Corp. in 2004 after 40 years in IT. Contact him at **ingepi@aol.com**.

Now I was really excited. What an opportunity! So I jumped right in. I talked about the role of the steering committee. I talked about the need for the users to spend time to define the system requirements. I discussed scope creep and the desire for IT to satisfy the users. I cited the November 2002 *Harvard Business Review* article by Jeanne Ross and Peter Weill titled "Six IT Decisions Your IT People Shouldn't Make." I talked at length about the need for the user department to develop the ROI for a project, since the savings will come from the use of the system. I explained the project development life cycle and how the users need to participate if the project is to be successful. I explained the need for change orders when significant alterations to the specs are required. At least these people would understand how to ensure IT project success.

My second session as a substitute coincided with the last meeting of the class. My topic was IT governance. I was pumped. We had had a lot of discussion about the need for collaboration between IT and the users, and I felt I had gotten through to them.

So at the end of the class, I asked, "How has your image of IT changed after 32 hours of class time?" I could hardly wait to hear those little nuggets of understanding.

But my hopes were quickly dashed. With the exception of one student, who indicated that he better understood what the users' roles should be, the remainder of the students said that their image of IT had not changed at all. One student remarked that he still didn't understand why IT isn't completely responsible for a project just like he is for projects in his department. I reminded him of the main reason, which I had used in my PowerPoint presentation on governance: *An IT system does not belong to IT. An IT system belongs to the user department.*

But it was to no avail. Most of the students had not understood how IT differs from other departments and were still comfortable in their stereotypes. Perhaps the comments became slanted once the first student took the no-change position and the rest followed. Or perhaps they did get a subconscious understanding that will emerge once they are back in the office environment.

Nevertheless, it was a sobering experience. If this group can be used as a valid measure, our image and reputation have not changed much over the years. These students all had undergraduate business degrees and at least five years of business experience. Imagine how non-business-schooled people might feel about IT.

I think we should take this experience seriously. CIOs should develop a much stronger program to explain the arcane aspects of IT and do so on a continuing basis. Perhaps we need to embed IT staffers in user departments or maybe vice versa. Perhaps we need to better market the successes of IT. Maybe we need formal relationship-building exercises, or perhaps we need to try all of the above.

Whatever the solution, it's clear to me that what we have been doing is not working. Someone said that the definition of insanity is doing the same thing over and over again and expecting different results. We can no longer ignore this problem and let it fester throughout the user community. It's time to address it proactively and improve the reputation and effectiveness of our IT departments.

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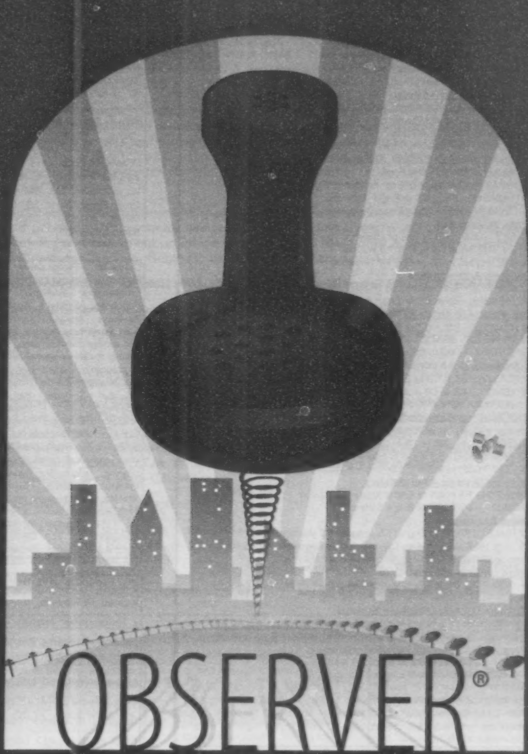

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DOD Report

month that all the code the DOD procures is at risk, from business software to so-called mission software that supports war-fighting efforts.

"The problem is we have a strategy now for net-centric warfare — everything is connected. And if the adversary is inside your network, you are totally vulnerable," said Lucky, who is an independent IT consultant and engineer.

The private sector faces similar threats and has already begun to adopt some of the practices the DSB is likely to recommend to the Pentagon, said John Pescatore, an information security analyst at Gartner Inc. The same risks also apply to software developed in the U.S., he added.

"This is a major concern, but not just when it goes offshore," Pescatore said. He called the focus on offshore developers "xenophobia" but said the software security concerns raised by the DOD should serve as a useful wake-up call for all organizations that buy software.

Lucky agreed that a risk exists with U.S.-developed software but said it is greater when code is written overseas. The goal for users should be to make informed trade-offs between the level of risk and the economics of developing software, he said. For example, malware risks could be greatly reduced by having only people with U.S. security clearances write software, but that would boost software development costs by three to 10 times, according to Lucky.

The DSB task force, which was commissioned by the Pentagon in October 2005, has been deliberating in secret. However, its report will be unclassified and is scheduled to be made available to the public soon after the first of the year.

Protective Measures

Lucky declined to comment on what the task force will recommend. But in response to industry fears he said that it won't call for all of the software used by the DOD to be developed in the U.S.

Meanwhile, he cited the following measures as worthwhile protective steps:

> "The problem is we have a strategy now for net-centric warfare – everything is connected.
>
> **ROBERT LUCKY,** CHAIRMAN, DEFENSE SCIENCE BOARD TASK FORCE

- Requiring peer reviews in which multiple programmers review code and test results. However, that increases development costs, Lucky noted.
- Running scan tools that look for dangerous code hidden in software. "But they're imperfect," Lucky said. "They can't find everything."
- Enforcing industry standards that can contribute to quality software code — for example, the Common Criteria standards, officially known as ISO 15408, for evaluating information security.

"It's almost an insolvable problem to think you can find all the possible problems with code," Lucky said. "What you can do, though, is raise the bar. Through inspection and testing and so forth, you can eliminate a certain percentage of problems."

A spokesman for the DOD said it couldn't comment on the upcoming report last week. The report was requested by Kenneth Krieg, undersecretary of defense for acquisition, technology and logistics, who wrote in a memo last year that the DOD needed a better understanding of how much "foreign-influenced software" is embedded in its systems and the risks the military would face if code were compromised.

Ira Winkler, author of the book *Spies Among Us* (Wiley, 2005) and a former analyst at the National Security Agency, said that the kinds of measures outlined by Lucky may be useful but that there is a much more obvious step.

"If there is one line of code written overseas, that's one line too many," Winkler said. "Developing it in the U.S. is not perfect, but we are talking about an exponential increase in risk by moving it overseas."

Winkler said the U.S. government typically buys systems that bundle the hardware, an operating system, a database and other components in addition to the application code. "You can put back doors and Trojans in any layer of that environment, not just in the custom code," he warned.

Indeed, the upcoming report is a follow-on to one released last year that detailed the risks of procuring microchips from foreign suppliers. The DSB called that practice "directly contrary to the best interest of the DOD" and wrote that "opportunities for adversaries to clandestinely manipulate technology used in critical U.S. microelectronics applications are enormous and increasing."

However, the "buy American" solution isn't as simple as it once would have been. With the globalization of the IT industry, many U.S. software vendors have set up overseas operations, and many have citizens of other countries working for them in the U.S. In addition, some software is based on integrated sets of components that are developed in different countries and would be difficult to tease apart if a U.S.-only procurement policy were adopted.

Phillip Bond, president of the Information Technology Association of America, said he expects the DSB task force to recommend that the Pentagon assign varying risk levels to software, with different procurement rules for each level.

"The danger would be if they deem too risky most commercial software, because in almost any software, there is some piece, some lines of code, written somewhere else around the world," he said.

Bond said the ITAA has commissioned the Center for Strategic and International Studies in Washington to conduct its own examination of the risks posed by overseas software development. The ITAA expects that study to be completed at about the same time the DSB issues its report.

Pescatore recommended that the DOD and other users deploy tools that scan software for vulnerabilities and perform "fuzz" testing, in which programs are deluged with streams of random data intended to evoke every possible response they can make.

But no single measure is likely to completely safeguard software, Lucky cautioned. "There are very clever things that can be done," he said. "And we're talking about complexity that boggles the mind. It's so enormous that no one can truly understand a program with millions of lines of source code." ▶

Simpler IT Approach Needed, Former CIO Says

PAUL STRASSMANN, a former Defense Department CIO who now is an adviser to its Business Transformation Agency, has told the DOD that it could help solve its application security problems by simplifying and standardizing its vast portfolio of IT systems.

Excluding intelligence and warfighting systems – for which the figures are huge but classified – the DOD currently has about 3,700 systems, including 174 supporting human resources in the U.S. Navy alone, according to Strassmann.

Most of those systems have been built one at a time, he said, and most have their own communications and access methods, interfaces, data definitions and so on.

"The opponent has every incentive to attack us electronically, and there are at least 3,700 points of vulnerability on the business side, and very few of them can be adequately defended," said Strassmann, who also teaches at George Mason University.

And the problem just keeps growing, he claimed. Each time a new application is needed, the DOD tends to buy yet another one-off systems infrastructure to support it, and up to 80% of all the code may be for software other than the application itself, Strassmann said.

"When you buy all those pieces, you can't possibly assure yourself they are OK – particularly when the program manager is rated on speed, completeness and cost, and security doesn't show up as a measurable performance indicator," he said.

Strassmann has recommended that the DOD significantly reduce the number of systems it has. The remaining systems could affordably be made robust, reliable and secure, he said, suggesting that the best way to do that is by deploying a service-oriented architecture. Newly developed application code would sit on top of the SOA.

That would mean the military would have to procure only the code directly associated with individual applications, greatly reducing its costs and security risks, Strassmann said. And, he noted, it would be easier to protect a particularly sensitive application by moving its code to one of the DOD's more classified and secure networks.

– GARY ANTHES

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FRANK HAYES ▪ FRANKLY SPEAKING

Disruptors

IS IT FAIR to lump a whistleblower in with the people he blows the whistle on? No, and I was wrong to give that impression when I wrote recently about Kaiser Permanente's problems with its multibillion-dollar electronic health records (EHR) system and the employee who raised a stink about it.

Readers pointed out that Justen Deal, the 25-year-old project supervisor who e-mailed a memo about those problems to 180,000 Kaiser Permanente employees, shouldn't be classed with CEO George Halvorson and ex-CIO Cliff Dodd, who pushed the troubled system and now face a financial pit and questions of conflict of interest.

They're right. The guy who spotlights the problem is disruptive — but not in the same way as the people who *caused* the problem.

And as *Computerworld* reporter Linda Rosencrance has learned, the EHR system, HealthConnect, is plenty disruptive on its own.

A Kaiser IT employee sent Rosencrance a 722-page internal Kaiser report confirming Deal's claims that HealthConnect continues to have outages that frustrate users and, in some cases, compromise patient care.

Kaiser says Deal is not an IT staffer, just a guy who works on health education publications. But IT people familiar with HealthConnect say the problems Deal cites are real — and were predicted when the technology for HealthConnect was originally considered and rejected by Kaiser's IT organization.

They also confirm that Halvorson and Dodd overrode that rejection and pushed through their technology choice for the system.

And no one disputes that within a week of Deal's e-mail, the CIO was gone. Kaiser insists there's no connection between the two events — despite the suspicious timing and the lack of any other explanation for the sudden departure.

In short, Deal isn't a crank or technically naive. He's a credible whistleblower throwing a spotlight on genuine problems.

So why did I line up tech-savvy CEO Halvorson, tight-with-the-boss CIO Dodd and whistleblower Deal together, suggesting that "these people have brought Kaiser what appear to be sweetheart deals, cover-ups and damaging publicity" and that "IT needs people with these qualities. Not these people, maybe, and certainly not these results"?

If you're a manager, you already know the answer.

Sweetheart deals, conflicts of interest, cover-ups — these create problems.

Whistleblowers create problems, too. In fairness, it's a different sort of problem, arguably a *good* kind of problem. Sometimes it's impossible to start cleaning up a mess until someone stands up and loudly declares that there *is* a mess. Without that first step, the mess will remain.

But the result is still disruptive. It shakes everything up, sucks up time and attention, distracts us from the productive work we need to do.

It's easy to say that we don't want people who gin up sweetheart deals or profit from conflicts of interest or cover up wrongdoing.

It's tougher to admit that we don't really want whistleblowers, either.

But it's true. We don't want the problems that spur whistleblowers, and we dread the chaos that is sure to follow in their wake. Whistleblowers are inconvenient. They stir up trouble. They're a pain in the butt.

And when they're needed, they truly are needed.

And we still won't like it. That's reality. That's us.

Which brings us back to Kaiser. Yes, without HealthConnect's problems, there'd be no need for a whistleblower like Justen Deal. And *with* those problems, Deal's whistleblowing may be an essential step in fixing them.

It's not a mess he created. He doesn't deserve to be lumped together with those who did.

But it's still an ugly, disruptive mess. And until it's finally cleaned up, most of us will just be glad we're not the ones taking the lumps. ◗

FRANK HAYES, *Computerworld's* senior news columnist, has covered IT for more than 20 years. Contact him at **frank_hayes@computerworld.com**.

If at First You Don't Succeed . . .

Pilot fish at a games company is testing a new game and takes a break to heat up a chicken pot pie. But after returning to his desk, the point-of-view "camera" starts to twitch. "Before long, the camera was jerking left and right every three seconds," fish says. He calls over the project lead, who tries swapping out the controller. No luck. "But his second guess was right on the money," says fish "He asked, 'Is it the chicken pot pie sitting on the mouse cable?' What?!? But as soon as I moved my lunch off the mouse cable, the camera stopped twitching. How many years does it take to garner the wisdom to guess that a chicken pot pie is interfering with computer input?"

SHARK TANK

Not Quite

IT manager pilot fish has to track equipment scattered across the country, so he creates a spreadsheet form for local managers to fill in equipment status. When he receives the files, fish merges them into his master file – until he gets one that's not what he's looking for. Sighs fish, "The user printed the form, wrote the data on it, scanned the form, inserted it in the spreadsheet and sent the file to me, just as I requested."

A Bit Too Remote

This organization uses remote-control software to install programs and troubleshoot users' PCs. "This allows us to be more places at once," says a support pilot fish there. "We help our users with everything – maybe a little too much. We received a help desk ticket that read: "I am working at home on my laptop but cannot install my printer. Info I received says that I must connect the printer. Please remote into the laptop and install the printer. I will leave the laptop on. Printer is next to the laptop."

Hot Stuff

Pilot fish gets a call from the company controller, who says his monitor is making a hissing sound. "He was afraid of the monitor exploding right in front of him while he was working," fish says. "Upon close examination, I noticed that his thermos was next to the monitor. I tightened the thermos's top and the hissing stopped. He was very grateful."

Hand-Cranked

Exec is at a conference and using her mobile phone to check e-mail. "At a break, she's scrolling through her in-box with the thumbwheel so fast that the thumbwheel makes a *ZZZzzzZZZzzz* noise," says a pilot fish watching. "A white-haired gentleman leans over to her and, in all seriousness, says, 'I didn't know you had to wind up those things!' "

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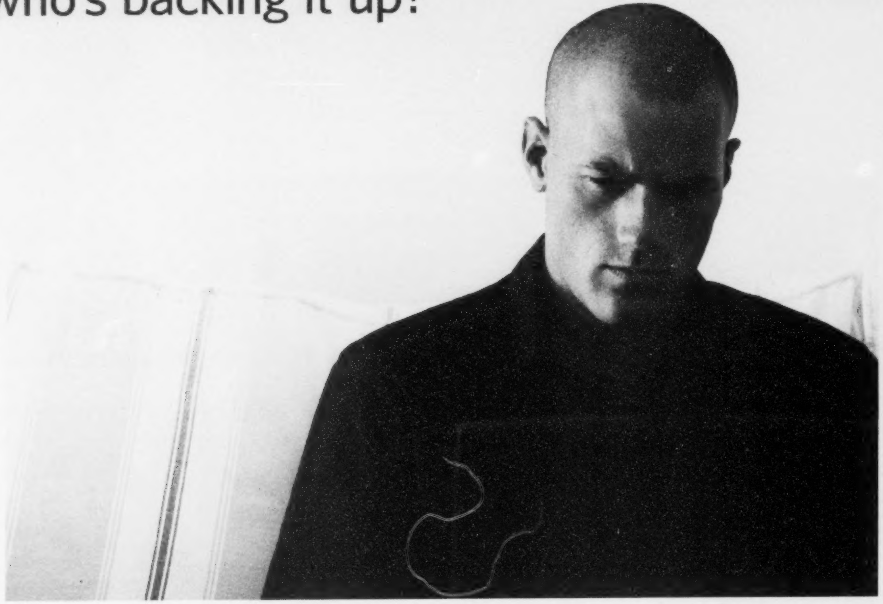

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